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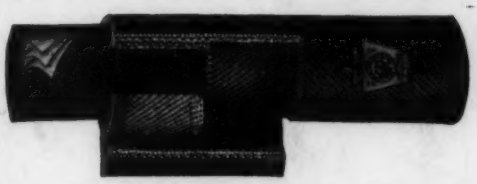

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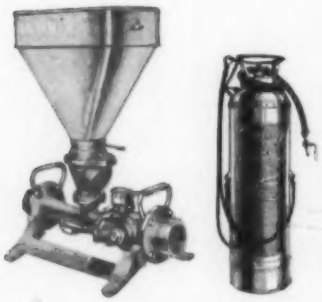

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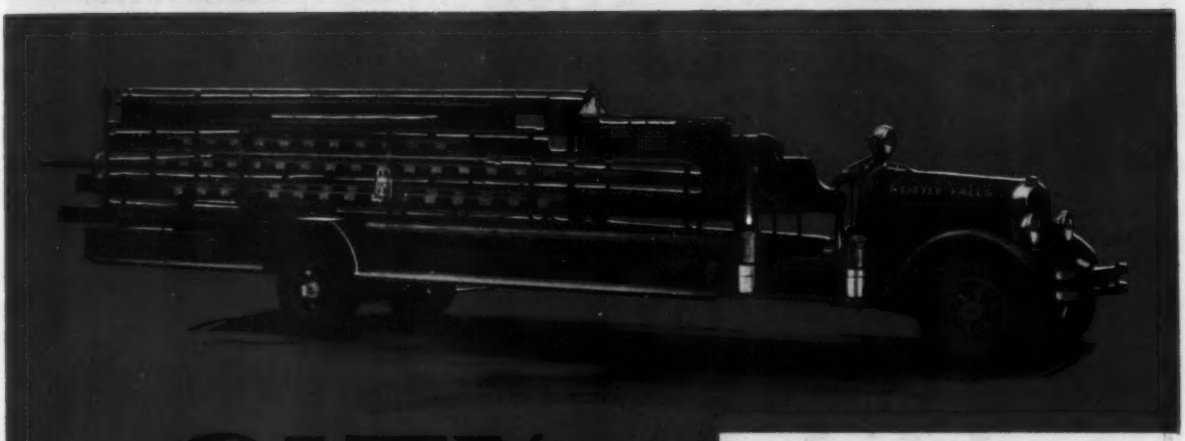

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

Published Every-Other Wednesday

SUBSCRIPTION PRICE
U. S. and Canada $3 a year; Foreign $4; Single copies 25c

Issued by CASE-SHEPPERD-MANN PUBLISHING CORPORATION
Also publishers of "Water Works Engineering," "Municipal Sanitation," Technical Books, etc.
24 West 40th Street, New York City
Western Office, 30 No. Michigan Ave., Chicago

KARL M. MANN
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The Publishers

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Contents of this issue copyrighted, 1930, by the Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York City.
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FIRE ENGINEERING

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The Journal of the Fire Protection Profession

VOLUME LXXXIII AUGUST 6, 1930 NUMBER 16

Dust Explosions—How to Prevent Them

What Causes Dust Explosions — Danger of Explosions During Fire Fighting—Preventive Measures Recommended

By BYRON J. CULP, Associate Engineer, Chemical Engineering Division, U. S. Department of Agriculture

THE increase of the dust explosion hazard through modern processes of manufacture makes the subject a very live one to the Chief of the Fire Department. The following paper will be found of great help in meeting the situation:

One of the first dust explosions of which a record is available occurred on December 14, 1785, in Italy. A full report of that explosion was published in 1795, and carries the information that the miller witnessed an explosion of flour dust ignited by means of an open-flame lamp as early as 1755.

We usually refer to the explosion of flour dust in the Washburn Mills in Minneapolis on May 2, 1878, as the first explosion of flour dust in this country. Records show, however, that an explosion of flour dust occurred in the United States as early as 1864. The explosion at the Washburn Mills probably originated in the dust or "stive" room. This explosion brought the dust explosion hazard forcibly before the minds of the people engaged in flour milling, and as a result the industry has been practically revolutionized. Efficient methods of handling material and collecting dust, improvements in the design of buildings, the elimination of sources of ignition, such as open flames, friction, and static electricity, have very greatly reduced the number and size of explosions in the grain milling and allied industries in spite of the fact that plants and elevators have grown tremendously in size and scope.

Expansion of Dust Explosion Hazard Field

Although more than 50 years ago our attention was very definitely called to the dust explosion hazard in the milling industries, and although the hazards in these industries have been reduced and proportionate losses lowered by efficient equipment and handling methods, and by improved construction features, the dust explosion hazard field has constantly grown.

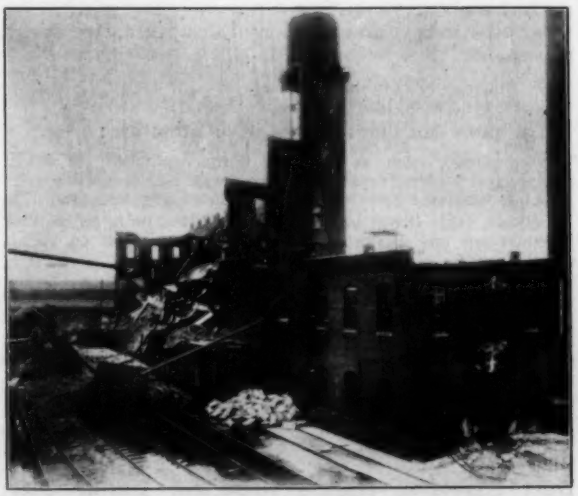
This condition has been brought about by the expansion of the food industries, the utilization of by-products and waste materials, the introduction of new methods and processes, with correspondingly increased production, and new types and sources of ignition.

At least 28,000 plants in the United States are subject to the hazard of dust explosions. Practically all of the food industries are included in this group. These plants employ considerably more than one and one-quarter million people and annually manufacture products valued at more than ten billions of dollars.

In recent years dust explosions have occurred in many industries where they had not previously taken place, so that the number of industrial plants in which the dust explosion hazard exists appears to be constantly increasing. In addition to the explosions occurring in grain handling and milling operations, there have been explosions of starch dust, sugar dust, powdered milk dust, chocolate dust, spice dusts, rice dust, cottonseed meal dust, wood dust, powdered rubber dust, paper dust, fertilizer dust, sulphur dust, zinc dust, magnesium powder, aluminum dust, pyroxylin lacquer dust, cork dust, dye materials, leather dust, and many others.

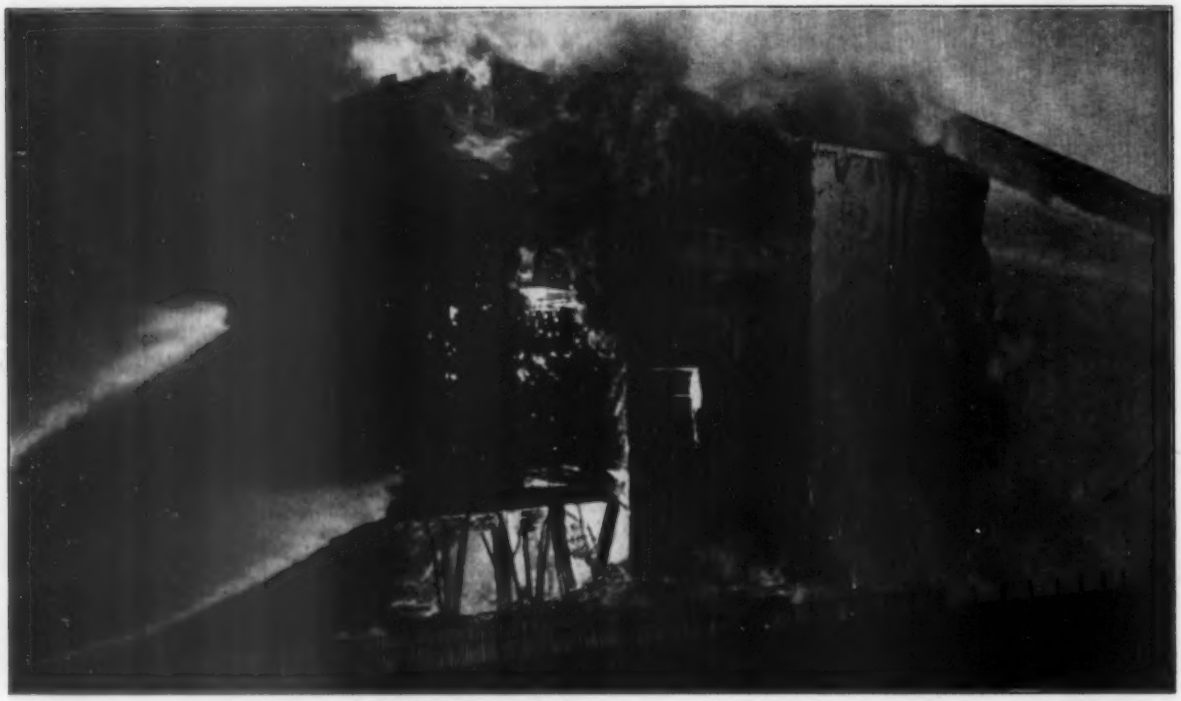
Causes of Dust Explosions

It is a known fact that when mixed with air in proper proportions, combustible dusts of almost all types can be ignited, with explosive violence. A dust explosion is really an extremely rapid burning of dust in suspension



What a Dust Explosion Did to a Corn Flour Plant

There was a loss of $225,000 as a result of the explosion of flour dust in this plant, with an injury of four persons. Fire finished the destruction begun by the explosion.



Effects of a Dust Explosion in a Grain Elevator

Three persons were injured, and a loss of one million dollars was incurred through explosion of dust in this elevator. Sixty fire companies fought the blaze.

in a proper mixture with air. The initial flash extends to the immediately adjacent particles in all directions, and this action continues to grow through the entire cloud. As the ignition progresses, pressure is built up due to the expansion of hot air and other gases and a rush of air is sent in all directions. This air pressure throws any dust on floors, beams, ledges, etc., into suspension, thus increasing the size of the dust cloud, and providing more fuel for the rapidly propagating flash.

The word picture cannot describe the speed of dust explosion, as usually only a second or two covers the total time necessary for the explosion to flash through an entire plant.

In order to have an explosion of dust, then, two things are essential:

1. A cloud of combustible dust.
2. A source of ignition.

The more common sources of ignition are:

Open flames, such as lanterns, lamps, matches, smoking, stoves, and boilers, or a fire in progress, including flame or glowing from the spontaneous ignition of any substance.

Friction, such as hot bearings, rubber belts, material choked in conveyors and elevators, or the impact of metal on metal, creating sparks.

Static Electricity, created by moving belts, in churns, mixers, etc., and by stock materials in moving contact with insulated conductors of various kinds, or with materials capable of storing up an electrical charge. It is claimed that some dusts in rapid motion through the air will generate a charge of static electricity in the dust particles themselves.

Electric sparks, such as sparks from motor brushes, arcs from blown fuses, circuit breakers, switches, and short circuits.

Dust Explosion Hazard Important During Fire Fighting

From the standpoint of the fire department the dust explosion hazard during the fighting of fires in industrial establishments is important.

Although many explosions have occurred during the normal operation of the plant, and although many fires have been caused by dust explosions, there are a number of instances where disastrous dust explosions have occurred during the time fires were in progress. In general these may be classified as follows:

1. Dust explosions that have taken place when firemen attempted to remove the contents of bins or other enclosures. These materials usually are in powdered form and can be readily ignited when they come in contact with a flame.

2. Explosions that have occurred some time after the fire started, in some instances after firemen have been fighting the fire for half an hour or more. The falling of a floor or the dropping of the bottoms of bins forces the dust cloud on to the fire, and an explosion results.

3. Explosions that have been caused by a heavy stream of water striking a pile of powdered material. The water forces the dust on to the flames of the fire, and an explosion follows.

A slightly different but allied hazard is sometimes encountered. Explosions have taken place during fire fighting as the result of chemical reaction between water and dusts of certain kinds. In the application of water to hot aluminum powder, for instance, we have not only the danger of creating a dust cloud which may explode, but there is also the danger of a gas explosion. According to Bureau of Mines Technical Paper 152, when water comes in contact with heated aluminum powder, oxygen and hydrogen are evolved. If an ignition source is present the hydrogen may ignite with explosive violence. Some heat is necessary to start the reaction, which has been found to take place to a small extent at temperatures as low as 30° C. (approximately 86° F.). It would appear that when dusts of this character are present the use of water in fighting a fire is dangerous.

During a fire in one plant in which the dust explosion hazard was present, 18 firemen were caught in an explosion. The fire had been in progress for approxi-

(Continued on page 670)

Methods, Tactics and Strategy of Fire Fighting

What to Do on First Arrival at a Fire—Importance of Judging Proper Size of Streams—Cellar Fires

By JOHN J. T. WALDRON, Deputy Chief, New York Fire Department;
Second Vice-President, Eastern Association of Fire Chiefs

MODERN fire fighting demands certain things of those who follow the profession. One of the principal of these is that the individual—whether Chief or private—must thoroughly know his duties and must not attempt to usurp those of the other. The following paper presents some important ideas along these lines:

John J. T. Waldron, Deputy Chief, N. Y. City

The purpose of this paper is to direct thought to the topic of methods, tactics and strategy in a general way rather than to merely cite unrelated details of application.

Several accepted principles have been developed in the science of fire fighting which should be remembered and often reiterated:

(a) First confine the fire, then move in and extinguish it;

(b) Never use first alarm methods on third alarm conditions;

(c) A secondary line of defense is essential when conflagration is imminent;

(d) Every possible appliance should be utilized when conditions permit;

(e) New methods, tried in advance, should be used to overcome disadvantages;

(f) Successful campaigns depend on the thorough training in advance, speedy application of knowledge acquired, and absolute discipline of the fire fighting force.

Chief and Private Must Know Duties and Stick to Them

There is a tendency in many fire departments in these modern times on the part of firemen studying their profession to usurp the supposed duties of a General and to neglect to perfect themselves in the detailed knowledge of the duties of the men in the ranks; and likewise, some Fire Chiefs may forget their more important duties and major responsibilities and attempt to perform the duties of their subordinates.

It is a happy army in which every soldier can carry out the individual and minor duties of his particular job and at the same time sense the purpose of his General's campaign, and in which the General, in planning an attack, is also familiar with every minor duty of his men.

Methods at First Arrival

Upon the arrival of the first apparatus, streams should be applied to confine the fire to the points found. If extending through roofs, windows or exterior walls and no adjacent structures are imperiled, lines taken to the interior of the flaming structure should be the usual method. There is no better place for flames to go than "out of the building" and in such cases if streams are operated from the exterior to drive the fire back it may cause further interior extension which would be an error in method.

If adjacent structures are exposed, however, a wagon pipe, street stream or other exterior stream should be used to prevent extension until other streams can be put into operation.

Size of Streams Matter of Judgment

The question of using light or heavy streams is a matter of judgment. To parallel fire fighting operations with military maneuvers: Where an offensive is desultory, snipers or sharpshooters are employed to offset attack, but when offensive is strong and widespread, a barrage of major character is laid down over endangered areas; and so if a blaze is light and scattering, many small streams should be employed, but where the "push" and scope of flames are intense, heavy streams must be used to stop spread.

Mass or frontal attack against a superior force is an error in tactics. Where the defense is weak, a flank defensive is the best plan to mow down offensive. Wagon pipes, water tower and similar heavy streams may lay down the frontal barrage while hand lines move in flanks or sides to control and extinguish the fire.

Error in Attack May Mean Conflagration

Error in attack has sometimes resulted in conflagration. A fire originating in a single frame and isolated dwelling and extending through the roof before the arrival of the first apparatus resulted in a conflagration

"It is a happy army in which every soldier can carry out the individual and minor duties of his particular job and at the same time sense the purpose of his General's campaign, and in which the General, in planning an attack, is also familiar with every minor duty of his men."

owing to a mistake of the first officer. First alarm method of taking the line inside the building was used. While the fire inside the building was extinguished, the adjacent building which was exposed ignited and before the additional companies arrived the fire was beyond control. Wrong tactics.

Handling a Stairway Fire

Where a fire originates within a stair and involves same but has not extended to lofts, lines must be stretched up fire escapes or ladders to upper floors without delay to prevent lateral spread at top of stair shaft. Wasted effort in attempt to carry lines and streams up a burning stairway is often a mis-directed method.

Planning and forethought, coupled with the result of general experience must be applied by every progressive Fire Chief in order that his profession and service may benefit.

Basement and Cellar Fires

A few modern methods are cited to carry out age-old principles. In joisted structures where single flooring exists, for basement and cellar fires, the following suggestion is offered: To put cellar pipes to work through floors and to effect ventilation, instead of cutting holes at various staggered points on the first or store floor, try taking up floor boards. Floor boards are usually 3½ inches wide by 18 or more feet in length. Floor beams extend from side wall to side wall and floor boards run from front to rear across the floor beams. Starting at the street entrance, on a line with the front door and down the centre aisle, take up the width of two floor boards. A claw tool or axe driven in the seam between boards, the first board pried up and at the same time lifting the entire length without breaking gives a start and an opening 3½ inches wide by 18 feet in length. Taking up the adjacent board makes an opening 7 inches in width. Follow this through to the rear wall. The cellar pipe can be dropped down and operated a short time at the doorway and advanced between the floor beams from front to rear. The only danger to be apprehended is fire lapping through opening and this can be controlled by a stream directed straight down the centre of the first floor. Men will know by avoiding opening in floor near street entrance they can prevent accident of stepping into holes. Greater ventilation is accomplished, which will permit quicker entrance to cellar with lines. It is easier to wash down between the floor beams with a bent tip if fire has extended between ceiling and floor. Easier repair can also be made after the fire.

Cellar Fires in Tenements

In the case of cellar fires in tenement and other structures, where fire is at the rear of stairway leading from the entrance hall to the cellar, the first company to arrive naturally takes lines to head of the stairs to the cellar, but may be unable to go down the stairway. Their position is usually most difficult, as the only point of cellar ventilation is at the head of the stair where they hold their line.

There may be a jib or triangular partition of wainscoting extending from floor to the string of the stair from first to second floor on the line with the stairway. Remove this partition without delay. Greater ventilation upward will be effected. The company can move their line toward the front or foot of the first floor stairway, direct the stream toward the rear of the cellar, prevent any upward extension of the fire and work more effectively in such a position.

Apply Principles of Military Operations

By the application of every principle developed in military and naval circles in major operations, the fire officers can advance their profession toward perfection, and an understanding of the terms in this paper may be of use to all concerned. "Method" means a way to do things; tactics means the act of military movements in actual warfare; and strategy means a show of skill in carrying out some special design.

To every officer of every fire department this important duty is charged—plan in advance, utilize the experience of your co-workers in your profession, be resourceful in emergency, and render to your city and community the service demanded and expected of you.

(From a paper read before the annual convention of the Eastern Association of Fire Chiefs at Baltimore, Md.)

Their Playing Was a Feature of the Southeastern Convention

The Fire Department Band of Greensboro, N. C., shown above, entertained the members and guests at the third annual convention of the Southeastern Division, International Association of Fire Chiefs, at Charlotte, N. C., June 24 and 25. The band not only performed at the sessions but also gave several concerts in the Hotel Charlotte during the convention.

Chief Herring Heads Egyptian Group

Chief Albert Herring, of Murphysboro, Ill., was re-elected President of the Egyptian Fire Fighters Association at their convention held in New Baden. This marks his fifth term as President.

The other officers are Chief Pete Lind, Cairo, Treasurer; Chief O. C. Forceman, Flora, Secretary, and an Executive Committee consisting of Harry Cash, Marion, A. Archibald, Centralia, A. C. Deibler, Xenia, Walter Frankeline, Belleville, and James Morris, Granite City.

Chief Herring and a number of others organized the association six years ago, with seven charter memberships. Today there are sixty-nine southern Illinois towns that have membership in the organization. The association has grown until today it is an important factor in fire prevention work in that part of the State.

Bridgeport Enlarges Department

The addition of thirteen new firemen and the promotion of two men was made by the Board of Fire Commissioners at Bridgeport, Conn., on July 14. All appointments and promotions went into effect on July 21. This brings the membership to 279. Three more appointments will be made in the near future, according to present plans.

Lieut. Elmer V. Fitzgerald of Chemical Co. No. 2 was promoted to a captaincy and Hoseman John F. Clancy of Chemical Co. No. 1 at Headquarters was advanced to a lieutenancy.

Plans for a parade and review of the Bridgeport Fire Department members and apparatus were completed and the date set is Saturday, September 27.

THOMAS F. MAGNER.

The Average Small Light Cotton Garment Factory is a Fire Trap

Flash Fires of the Clothing Industry

Light Cotton Garment Factory a Serious Life Hazard—Congestion of Employees, Highly Inflammable Materials Present Contribute to the Life Problem

THE average light cotton garment factory does not represent as severe a fire fighting problem to the average department as it does a life hazard problem. This is due to the fact that the amount of materials commonly found in such factories, even though highly inflammable, do not represent as large a bulk as might be encountered in other types of industrial establishments.

Cloth is received in bolts which, in this form, burn no more vigorously than does wood. The bulk of the material is kept in bolts, and is used only as required.

A day's operations at a cotton clothing factory may represent a comparatively small amount of goods but in the shape of garments, in containers for shipment, may bulk up to huge proportions. Nevertheless the mass of combustible material is comparatively small.

The chief hazard in connection with fires in this type of establishment is due to the haphazard method with which finished garments and wastes are handled during the process of production.

Sewing machines are ranged in two parallel lines on a split table. All the machines on one table are usually driven by a single motor and shafting running the entire length of the table. Between the two sections of the split table is usually suspended a canvas apron in which the finished garments are pushed from the machines. These flimsy garments may stack up to enormous volume.

On the cutting table, waste may be carelessly handled, and may accumulate in big piles beneath the table.

All it requires in either case is a source of ignition, and fire will travel with phenomenal speed along the line of sewing machines or beneath the cutting tables. This rapid spread of fire, and the suddenness with which it usually takes place, is apt to stampede the closely ranged employees, and unless easy and ample egress is provided, loss of life may occur.

One of the most disastrous fires of this type occurred in the Asch Building in New York in 1911.

The Asch Building Fire

The building in which this fire occurred was a 10-story loft building and the top three floors were occupied by the Triangle Shirtwaist Company. On the eighth

floor there were five unbroken rows of four-foot tables, each containing a double row of sewing machines used on shirtwaists in the process of manufacture. These tables extended from the south front of the building to within eighteen feet of the north side of the building. This latter space was partially filled with stock, principally on tables. An aisle space was also left running east and west along the north side. The space along the east wall contained the cutting tables. Approximately 275 operators were on this floor.

On the ninth floor there were eight unbroken rows of four-foot tables each containing a double row of sewing machines and shirtwaists in the process of manufacture. These tables extended from the Washington Place front (south wall) to 10 feet of the north side of the building. The latter space at the north side was partially filled with stock, and also contained an aisle extending east and west along the north side. Approximately 300 operators were on this floor. There were no aisles running east and west on the south side of the eighth and ninth floors, the sewing machine tables extending close up to the wall. The space between the tables was approximately 4 feet wide and contained two rows of chairs back to back for the operators. This space also contained baskets and other receptacles for the goods in the process of manufacture. The only convenient way for the operators next to the south wall to reach the stairs and elevators at the southwest corner, was to walk the entire length of the crowded space between the tables to the north side and then use the aisles which extended along the north and west sides of the building.

On the tenth floor very little work was done, it being used principally for the offices, show and stock rooms, and shipping department. About 30 hands were employed on this floor pressing shirtwaists by gas heated irons. Approximately 60 employees worked on this floor.

The fire started about a quarter to five in the evening on the eighth floor, near the northwest corner of the building. The cause is believed to have been a match or a cigarette carelessly tossed on waste materials lying on the floor. Unsuccessful efforts were made to extinguish the fire by means of the fire pails, but the exceptionally quick spread of the fire was undoubtedly due to the large quantities of inflammable stock in the process of manufacture. As to the result, suffice to say that practically all of the employes on the eighth floor escaped by means of stairways or elevators, as did nearly all of those on the tenth floor by means of stairs to the roof, and then to the roofs of adjoining buildings. Practically the entire loss of life, which totalled 145 (nearly all females), was confined to the ninth floor.

The fire spreading from the eighth floor quickly reached the stairwells and elevator shafts and cut off possible escape from the ninth floor. As a result when fire entered the ninth floor many who were panic stricken jumped from this floor to the street, and were instantly killed. Others jumped down the elevator shaft, while still others remained and were burned to death. The damage to the building was comparatively slight.

The fire did not burn more than half an hour all told, and it was within this time that the serious loss of life occurred.

The average light cotton goods garment factory is typical of the layout described above. While in larger cities sprinklers and standpipes may be provided, still there are many cases where such modern fire fighting facilities are not available. In this case, unless the department is particularly fortunate in getting to the fire very quickly and in providing ventilation, serious loss of life may result.

It would be impossible for the average department to get the occupants of a floor such as in the Asch Building to the street safely in advance of a fast-spreading fire such as occurred, even though the department were on hand when the fire started. The only resource would be to delay the fire by providing ventilation, and possibly permit the department to operate at close range and hold the fire until occupants were safely conducted to the roof, to the street, or to roofs of adjacent buildings.

From the standpoint of preventing serious loss of lives in factories such as this, frequent inspections should be made to assure the maintenance of proper means of egress and the elimination of obstructions in aisles or passageways leading to fire escapes, stairwells or smoke towers.

Due to the tremendous rapidity with which fire will spread in and along tables and sewing machines, particularly toward the end of the day when stock has accumulated, there is little hope of the fire department extinguishing the fire to prevent loss of life. Life saving measures would, as noted above, include prompt ventilation to delay the fire and thus draw the fire up channels which would leave other means of escape available for the occupants.

When fire is on the lower floors of a building, for instance the second or third, the life hazard would be very much reduced because of the ability of the department to get streams into the windows and drive the fire back; also due to the feasibility of bringing life nets and other rapid life saving means into play. It is the high fire, particularly in the loft building not properly equipped with sprinklers and standpipe equipment, that may be expected to develop severe life hazard conditions in the event of fire.

Chief Russell, Toronto, Resigns

Chief W. Russell, of the Toronto, Ont., Can., Fire Department, has resigned from that post, after a service of forty-seven years, eleven of which he has been at its head. He entered the department on January 10, 1883 and was promoted to be a captain in 1901. In 1911 he was elevated to the position of district chief and in 1916 was made a deputy chief. He became Chief of the Toronto department in 1919.

Chief Russell was the host to the forty-eighth annual convention of the International Association of Fire Engineers (now Chiefs) when that body met in Toronto on July 26 to 30, 1920.

Chief Russell has been succeeded by Chief George Sinclair.

Ex-Chief W. Russell

Women Form Fire Department

As the men folk are at work during the day, the woman of Chalfont Borough, just outside of Pittsburgh, Pa., have formed a fire department of their own to take care of any blazes that may occur. If an alarm comes in during the absence of the husbands and brothers, Mrs. Sara Long, the Chief, will take out the fire truck, assisted by the other feminine members of her corps. The fire fighting on such occasions will be entirely by members of the fair sex. They have adopted a uniform entirely of white, with white caps.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

"A Picture Is Worth Ten Thousand Words"—In Court

BOY SCOUTS have a very instructive and practical game that brings home a great human weakness. A number of varied objects are placed on a table. Each boy is allowed a definite time to form the mental picture. He must then try to name the various objects on the table.

Simple? Well, try it.

Nor is that the only handicap. Few are gifted with the proper vocabularies for describing an object accurately. If you question this, try to describe a fire gong to one who is supposed never to have seen such an instrument. Should you be able to convey a proper mental picture without the use of diagrams and sketches, consider yourself one in thousands.

Pictures are necessary. The words "dirty garage" may mean one thing to one, and possibly a more serious condition to another. A photograph of *the* dirty garage presents the same mass facts to all. And it presents the information accurately without trusting to the ever-tricky human memory.

That is why photographs are valued so highly as evidence in court, and it is also the reason that many departments take photographs freely whenever violations or suspicious conditions are discovered.

This discussion is in answer to the following questions:

Does your department ever take photographs of hazards, violations, suspicious fire settings, or other objects in connection with the department's activities?

Are such pictures taken by commercial photographers or by a member of the department assigned to that work?

What is your opinion of the value of such work?

In the box on the following page is the problem that will be discussed in the next issue. Should you have some comment that you would like to add to the next discussion or if you have a question that you would like to see treated in this department, write to the "Round Table Editor, FIRE ENGINEERING, 24 W. 40th St., New York, N. Y.

The Question

Many departments take their own photographs of abnormal conditions, and a few have the work done by commercial photographers. Chiefs who do not follow this procedure at present agree that the plan suggested is a good one to follow.

E. A. McGranahan, Chief, Wheeling, W. Va.: We have never taken pictures of hazards, violations, fire settings and so forth, but we have had photographs taken of

suspicious fires. These were taken by commercial photographers.

The value of such work is very beneficial. With a photograph it is possible to show the conditions of a fire before the blaze started.

I suggest that the department should have a corps of men take photographs which should be filed for future reference.

Richard L. Smith, Chief, Pittsburgh, Pa.: Our department has had photographs taken, particularly of suspicious fire settings where incendiarism is indicated or arson suspected.

The pictures are taken either by the Bertillon Division photographer and if he is not immediately available, they are taken by an official photographer of the Department of Public Works. We expect to have our own photographer in the near future.

It is self-evident that such work is of high value and is a necessity where suit is entered for a serious violation of Fire Prevention Code, where incendiarism is suspected, or where a charge of arson has been preferred. It serves as first hand evidence and helps to brush up the memory of witnesses if a delay has occurred in the trial.

Louis Behrens, Chief, Charleston, S. C.: Photographs are taken at any supposed incendiary fire for fire prevention use.

All large exposures are made by commercial photographers; all others by members of the department with regular cameras.

This work is very important at fires of supposed incendiary origin. It enables you to place an exact view of the situation before the prosecuting attorney and the jury.

W. W. Tawney, Chief, Harrisburg, Pa.: Pictures are taken by some member of the department, not specially assigned, and by the Pennsylvania State Police, Bureau of Fire, which is located in our city. Sometimes local photographers are engaged for this work.

It has done wonders in our fire prevention work. Photographs have been used on screens in fire prevention programs, without the names of property owners. Photographs pertaining to incendiarism have been used in getting convictions for arson. Personally, the photographic work in connection with fire department work is of inestimable value. A camera is carried in my car at all times, for emergency.

G. W. Hedden, Commissioner, Buffalo, N. Y.: Where we deem it necessary, we have pictures taken of suspicious fire settings and these pictures are taken by commercial photographers. We have no one in the fire department assigned to this work.

The value of such work, in my opinion, cannot be too highly estimated, but it should be done by members of the department who are thoroughly familiar with the taking of pictures. We have a great many incendiary fires in Buffalo and photographs have helped considerably when trying to show the incendiary set-up. We are at present trying to find some one in the department who is familiar with this work and as soon as we do, we will make provisions to always have him on the job, and ready for anything that may be necessary along these lines.

Thos. J. Nicholas, Chief, Camden, N. J.: At the present time we are not taking pictures. Our captains make their regular fire inspections, and on finding conditions of this sort, are instructed to refer the matter to the fire marshal's office. Where pictures would be necessary, it would be done by a local photographer.

My opinion is that this work is the real step towards a modern fire department.

We expect in the future to place a "Cine-Kodak" motion picture camera with one hundred feet of film, in the chief's car as regular equipment, and my drivers will be instructed to operate it.

Pictures will be taken of all extraordinary conditions: Incendiary cases, dilapidated buildings, fire escapes obstructed, accidents with apparatus, cars parked in front of fire hydrants, fires in the first and last stages, and so forth. The film when completed could be shown to the proper authorities or to members of the department.

This motion picture camera will act as the greatest efficiency expert in fire activities for a very small cost. It will prove if a person is guilty of the crime charged.

E. E. Chase, Chief, Lynn, Mass.: We take pictures of fire hazards and of suspicious fires.

Photographs of hazards are taken by newspaper photographers. Views of suspicious fires are taken by a photographer of the state fire marshal's office, and are used as evidence in court. The plan has worked to great advantage a number of times.

Leo J. Urbanski, Chief, St. Joseph, Mo.: We have taken pictures of several incendiary fires. The work was done by commercial photographers for we have no one in the department that can do this work.

We were able to convict and send one man to the penitentiary by taking a picture of an incendiary fire just as it was found by the department. The evidence consisted of fifty gallons of gasoline in five-gallon containers, placed throughout the building.

Pictures, without doubt, would help in court cases of this kind.

E. F. Dahill, Chief, New Bedford, Mass.: Our fire prevention bureau takes photographs of hazardous conditions and fires. We have a camera, but usually employ expert photographers. We also keep in our files for reference copies of newspaper fire pictures. During the past two years we have secured two convictions for arson and photographs were used as evidence.

Some of the photographs that we have are made into slides and used in connection with fire prevention talks. I believe the use of the camera to be of great value in fire prevention work.

C. L. Ingram, Chief, Montgomery, Ala.: The department does not take pictures. Sometimes pictures are taken by the local papers. Only commercial photographs are used. I believe that they are nice to have.

James J. Mulcahey, Chief, Yonkers, N. Y.: We take photographs where condition warrant them, such as hazards or violations where the owner or occupant is not concerned about removing them. Pictures are also used as evidence in suspicious fires where and when we come across them.

Photographs are taken by the photographic staff of our police bureau. This work has a beneficial moral effect.

Henry A. Fox, Chief, Boston, Mass.: The department does not take pictures.

Pictures might be of considerable value in some cases and in others they would not.

Under the existing laws governing the functions of the fire department, the investigation of suspicious fires is done by the Department of Public Safety of the Commonwealth of Massachusetts, under the supervision of the state fire marshal's office.

On December 1 there is a new law going into effect which will give the fire department more power in regard to supposedly incendiary fires, at which time we will work out another plan.

Thomas D. Blake, Chief, Rockford, Ill.: Some pictures are taken by members of the department and some by commercial photographers.

It is very valuable to have the photographs on file for use in court cases, for generally investigations are made long after the fire has occurred. Photographs are taken of all fires, violations, and suspicious fire settings.

Edmund B. Lewis, Acting Chief, Scranton, Pa.: Our department does not take pictures of fire hazards or suspicious fires. Pictures are sometimes taken by commercial pho-

(*Continued on page 665*)

HERE IS THE PROBLEM FOR THE NEXT ISSUE

What method do you follow in raising hose to the various floors or partitions, in place of the "dough-nut" method?

What method do you follow in raising hose to high points in a burning building?

With the Editor

A Prize Winning Essay

The idea of offering prizes for stimulating competition in the writing of Fire Prevention Essays in schools, colleges and other institutions not only has the advantage of producing something worth while, as in the case of the essay written by Miss Mary Murphy, and reproduced in part in another column, but also it has the result of leading the members of the younger generation to think seriously on the subject.

If the plan of competitive essays on fire prevention had no other result than that of turning the eyes of the young in the direction of more care in matters of fire, it would justify whatever trouble and money has been spent upon its propagation.

The enlisting of the interest of the youth of both sexes in the idea of fire carefulness is a matter of the most vital importance. These young people, flighty as they may at times appear to their more staid elders, have quite distinctly their serious side. One thing is very sure, and it is this: If once their interest and enthusiasm can be aroused in the cause of fire prevention, the onward march of this principle—for it is a principle—would be irresistible. There would be no surer way of accomplishing real fire prevention than by this means. The fire losses—still so staggering in their figures—would dwindle to mere nothing under the mighty surge of the young peoples' influence against them.

Such a result sounds like a dream—and yet, that very thing is being brought about in a lesser way by competitions and the offering of prizes for extra efforts in behalf of fire prevention. It is simply a case of pushing the matter to a conclusion—of extending the influence of the enthusiasm for fire prevention along the lines of education, in such a way as to intrigue and arouse the interest of the younger generation to the pitch where they will throw the weight of their vigorous and vital personalities into making it a success. If this can be done, nothing will hold them back!

Criticism That Is Not Constructive

Criticism that is constructive in its nature and that seeks to improve is generally useful and has the effect of stimulating the individual receiving it to better undertakings. But there is another type of criticism that is decidedly destructive in its nature and contains an unnecessary sting that is apt to do more harm than good. Criticism of this nature is in the majority of cases based either on ignorance of the true facts, or is made with the deliberate intention of harming the person or thing criticized.

An instance of this kind appeared in the columns of the St. Louis *Post Dispatch*, and under the circumstances, with the enviable reputation of the journal in question in mind, one must feel that it has been the victim of the questionable wit of one of its "cub" reporters. Following is a reproduction of the paragraph in question, taken from the Editorial Section of the *Post Dispatch*, of the evening of July 21:

The Passing of the Volunteer Brigade

The annual convention of the Egyptian Fire Fighters' Association at New Baden, Ill., calls to mind that beautiful lament at the passing of the volunteer brigade which graced its meeting a summer or so ago—a lament which filtered in too late for news. A veteran volunteer fire fighter from Millstadt, as we remember, arose to observe that gone were the days when the boys took an interest in volunteer brigades. Times was when many of the squad wouldn't have missed a drill night for the world. Some had perfect attendance records which went back years. That was when the beer wagon stopped by the engine house before drill time and rolled off refreshment for the social hour which followed practice. But now, alas! The boys simply wouldn't come out any more. The old incentive was gone and so was civic pride. There wasn't any use to try to keep up. The volunteer brigade belonged to a day of different customs. It had passed on.

Aside altogether from the questionable taste of publishing such a gibe as this, it seems that the columns of the daily might have been occupied to better advantage in boosting the work of the firemen who devote their time to protecting the citizens from the danger of fire. This is especially true of that admirable body, the Egyptian Fire Fighters' Association, which, under the leadership of Chief Albert Herring, has accomplished such an efficient fire fighting organization in the section it covers.

Wit, what crimes are committed in thy name!

Forest Fires and Smokers

If the information received by the American Forestry Association is correct—and there is every reason to believe that it is—the great majority of the devastating forest fires that have visited the country this year and in previous years can be laid at the door of the careless smoker. According to statistics which the President of this association quotes in a recent statement, smokers have been blamed for 50 per cent of the forest fires in New York, 38 per cent in New Hampshire, 37 per cent in Connecticut, 18 per cent in North Carolina and 10 per cent in New Jersey. A large number of fires of unaccountable origin have also been laid by United States forest rangers to carelessly tossed lighted cigars, cigarettes or matches.

Not only did the recent outbreak of forest fires in the Eastern part of the country destroy thousands of acres of valuable timber land, but resulted also in the

burning of residences, and in at least one instance a whole town was wiped out before the blaze could be checked. Human lives have also been sacrificed to this form of criminal carelessness.

If these fires in wooded areas destroyed only the standing timber it might not be so bad—though bad enough! But when it is considered that the young growth is also wiped out, the damage is seen to be almost irreparable. For this means that it will be many years before the seared and blackened areas will recover and new growths of trees will be of sufficient size to begin to compensate for the loss of shade caused by the fire. This phase of the problem is almost of more importance than the property loss, as it means the drying up of the streams and brooks, and a serious loss of available water.

At any rate, the careless smoker is ever with us, and to curb his damage-making habits is a very serious and vexing problem.

Of course, when he is caught, an example can be made of him. It is a pity, in a way, that the old-fashioned stocks could not be revived for this particular offender. A few of these individuals placed in the uncomfortable sitting posture, with their feet in "durance vile" for all to see, might have a deterring effect upon this class of offender. However, our more gentle type of civilization will not allow of that extreme of punishment, and we must be content to reach them through their pocketbooks, by a substantial fine when they are apprehended.

Partial List of I. A. F. C. Exhibitors

To date, the following concerns have contracted for exhibit space in the Minto Armory, Winnipeg, Canada, during the convention of the International Association of Fire Chiefs.

American Fomon Co.
American-LaFrance Co.
Ahrens-Fox Fire Engine Co.
Akron Brass Co.
Eureka Fire Hose Mfg. Co.
Elkhart Brass Co.
FIRE ENGINEERING
Fulton Bag and Cotton Mills
Fyr Fyter Co.
Federal Electric Co.
Gamewell Co.
Mack Motor Co.
P-B Products Co.
Pyrene Co.
Harry Pinsell
Petch Clothing Co.
Phister Co.

Many additions are expected to this list before the final one is printed, and manufacturers are urged by the Exhibit Committee (Chief Charles Ault, St. Louis, Mo., Chairman), to make reservations at once, to avoid possibility of being crowded out.

New York Apparatus to Be Less Noisy

The following general order, promulgated from the office of the New York Fire Commissioner, is a move toward the reduction of unnecessary noise by fire apparatus, when passing through the streets. The order is dated July 29:

Sirens of apparatus shall not be sounded, except when proceeding to fires, or at points where traffic impedes their progress while returning to quarters from fires.

To guard against accident at other times, bells shall be sounded as frequently as the traffic conditions require. This shall be dispensed with, when consistent with safety, in the immediate vicinity of hospitals, or of theatres, churches or places of a public character when people are likely to be assembled there.

Fire Apparatus Housed in Burlington, N. J.—The new fire apparatus of Niagara Company, Burlington, N. J., was formally housed with a parade and exercises.

Santa Clara, Cal., to Insure Firemen—Plans have been made by Santa Clara, Cal., to issue insurance to protect firemen responding to fires in private cars. It is intended primarily to protect volunteer firemen.

Noted Buff Named Deputy Commissioner

Edward J. Kenny, whose interest in the New York Fire Department dates back to volunteer days, has been named Deputy Fire Commissioner by Commissioner John J. Dorman, to succeed Charles W. Jannicky who was recently forced to resign.

Mr. Kenny is termed the millionaire fire-fighter and is a brother of William J. Kenny, boyhood friend of former Governor Alfred E. Smith. He has been a friend of the firemen for some time, donating an ambulance and a well-equipped coffee and sandwich truck, as well as powerful searchlights for the department.

For his lighting developments, extending through his connection for years with the New York Edison Company, Mr. Kenny was made an honorary Deputy Fire Chief, while his personal service at the Malbone tunnel wreck of fifteen years ago brought him a medal from the city Fire Department.

Mr. Kenny said:

"I was born on Christmas Day in 1870, in the East Side. Al Smith lived around the corner, but we didn't run with the same engine. He ran with Engine No. 9 on East Broadway, while I went with the No. 7 Engine Company which was housed in the old engine house in City Hall Park. My father, Thomas A. Kenny, became captain of that company in 1885. He joined the department on August 6, 1876, became a lieutenant two or three years later and was fire chief when he died, after thirty-three years in the work.

Fire Commissioner John J. Dorman, of New York (Left), Presenting the Deputy Commissioner's Badge to Edward J. Kenny

"I think the strain was in me. I have always liked to go to fires. I'm delighted at the appointment. I'm what they call a real 'buff.' It's just a hobby. I like to do anything to make the firemen happy."

Asked if he thought that his new position would enable him to do more for the happiness of the Brooklyn firemen, Mr. Kenny said. "That's what I'm going to try to do: That's my ambition. I'm just a buff, and I may not know the inside thoroughly, but I'm going to learn."

Mr. Kenny laughed at the difference between his business connections today and those when he ran with the horses. He has a brokerage business at 61 Broadway, is Vice-President of the Hickey Contracting Company, the William F. Kenny Company, the Nealon-Sullivan Realty Company, and the Nealon Auto Service Corporation and holds directorships in several other corporations.

Menasha, Wis., Considering Pensions—Meetings have been held in Menasha, Wis., to consider the matter of fire department pensions.

Wisconsin Paid Firemen to Meet in August—Governor Walter J. Kohler, of Wisconsin, will be the guest speaker at the twenty-third annual convention of the Wisconsin Paid Firemen's Association which will be held in Twin River, August 12-14.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

New York Department Order No. 36

To the Editor:

Will you kindly publish in your journal general order No. 36 of the New York Fire Department which relates to building inspections in this department.

D. T.

Answer: General order No. 36 of the New York Fire Department, published May 2nd, 1930, reads as follows:

"I. The following is promulgated for the information and guidance of the Uniformed Force:

"(a) Building Inspectors, when leaving quarters to inspect buildings, will cause to be entered in Company Journal the addresses of buildings to be inspected and such inspections will be made in the sequence of their entry in the Company Journal. This, to enable proper supervision of inspection activities.

"(b) Building Inspectors, on entering buildings for the purpose of inspection, will make known their presence to some person in charge of the building, and do likewise to individual occupants of floors, for the purpose of properly carrying out the provisions of Par. 1, G. O. 7, dated January 24, 1914.

"(c) Particular attention is called to the instructions contained in G. O. 55, dated October 31, 1916, in reference to 'Standpipe Hose,' 'Smoking in Factories,' 'Posting of "No Smoking" Signs'; in addition, shall be added garages and combustible occupancies where smoking is prohibited. ('No Smoking' signs can not be obtained at the Bureau of Fire Prevention, both in Manhattan and Brooklyn but, in the near future, will be procured at Battalion Headquarters.) 'Locked Doors'—report to be made by telephone to Worth 4100, Extension 89, for Manhattan, Bronx and Richmond, and Triangle 8340, Extension 32, for Brooklyn and Queens.

"(d) The practice of forwarding Form 'A,' recommending sprinkler installations in buildings will be discontinued and, in lieu thereof, a communication will be forwarded requesting that a survey be made of premises by an Inspector of the Bureau of Fire Prevention to determine the necessity for such installations. When survey is to be made the Company Commander will be notified and an officer of the Company will accompany the Inspector of the Bureau of Fire Prevention in making such survey.

"(e) When surveys are made on applications for renewal of permits, and minor violations are found to exist such as lack of fireproof receptacles, sand pails, water buckets, certificates of fitness, rubbish, etc., Building Inspectors will give verbal notice to occupants to remedy the conditions found. Another inspection will be made in ten (10) days to ascertain if verbal notice has been complied with. Application will then be returned to the Bureau of Fire Prevention with proper recommendation of Company Commander.

"(f) When occupancy reports (blue slips) are received from the Bureau of Fire Prevention, inspections will be made as per instructions contained in G. O. 38, dated July 28, 1914, except that when slips are returned to the Bureau of Fire Prevention marked 'Not Complied With' (N.C.W.) Form 'A' or Form 'D' will not be necessary. Not more than two (2) inspections will be made on blue slips and reinspection slips that may be received from the Bureau of Fire Prevention; inspections will be made at intervals of twelve (12) days and occupancy reports (blue slips) and reinspection slips that may be received for inspection will be returned marked 'Complied With (CW) or 'Not Complied With' (N.C.W.) to the Bureau of Fire Prevention not later than thirty (30) days after their receipt by Company Commanders. Building Inspectors will mark on back of blue slips: Date of Inspection, Name, Rank, Company Number and name of person given verbal notice.

"(g) Company Commanders will make an immediate check-up of their buildings records and, where it is found that Form 'A' or 'D' has been forwarded for dangerous conditions existing in their Company Districts and no disposition slip or copy of order has been received from the Bureau of Fire Prevention, a special report will be forwarded giving location of premises, exact nature of violation and date Form 'A' or 'D' was forwarded.

"(h) When plans have been approved by the Bureau of Fire Prevention for standpipe and sprinkler installations they will be forwarded to Deputy Chiefs of Department in whose division the premises are located to be filed in Division Headquarters. Plans will be filed so as to be readily accessible when requested by the Bureau of Fire Prevention. Proper receipts will be obtained when plans are turned over.

"(i) Addition to G. O. 50, dated December 26, 1923: When Fireman Inspector inspects building and finds no violations, he will make notation on the yellow card: Date——, Inspected Building, no violations found; (Inspector's name in ink)."

Relay Lines

To the Editor:

As a point of information will you kindly work out the problem shown in the diagram of your June 25th issue? I am referring to the one showing a line being relayed at a fire. I would like to see how you get the 54 lbs. nozzle pressure.

H. M. W.

Answer: We have checked over the drawing on page 540 of our June 25th issue and have made calculations based on the figures in that sketch. While the correctness of the reader's figures were not questioned, only the final result being considered, in the answer as given in the previous issue, there appears to be some discrepancy in the engine pressure which the reader secured, as well as a small difference in the pressure at the nozzle as determined by recognized methods.

Apparently the reader who submitted this diagram added the seven pounds pressure delivered to the engine to the 250 pounds created by it, giving 257 pounds on the discharge side. This is incorrect in view of the fact that the engine pressure was indicated as 250 pounds. If the reader employed 257 pounds in his solution, he would get 54 pounds nozzle pressure. On the other hand if he employed 250 pounds as the pressure at the discharge side of the pump, he would get 52 pounds nozzle pressure.

Insofar as the pressure created by the two engines are concerned, he is incorrect in his calculations in view of the fact that for a flow of 270 gallons per minute (which a 1⅛" nozzle would give at 54 pounds) the friction loss would be 16.7 pounds per 100 feet approximate. This would give the drop between the first and second engine as 225½ pounds. This would leave on the intake side 25 pounds instead of 7 pounds as shown on the diagram.

Calculating Pump Pressure

To the Editor:

Will you please answer the following question:

A 500 gallon pump is pumping water from a hydrant with a 75 lb. hydrant pressure through 1,500 feet of 2½" hose. What pressure would be necessary in order to secure proper pressure at the nozzle? Also, would you run two such lines from this pump?

S. F. D.

Answer: You do not specify the size of nozzle desired, but taking into account the length of the line, 1,500 feet, and the diameter of the hose, 2½", a 1-inch nozzle would probably be used.

On this basis the following calculations are made:

Nozzle pressures of from 40 to 60 pounds are considered

satisfactory on small nozzles. Assuming a nozzle pressure of 40 pounds, engine pressure would be found by the formula:

E.P.=N.P.×(1.1+K×L)
=40×(1.1+.105.×30)

Where "K", the factor for 2½" hose with 1-inch nozzle, is .105. And "L", the number of 50 ft. lengths in the line, is 30.

E.P.=40×4.25=170 lbs.

This is the pressure which would be required on the discharge side of the engine to give 40 pounds at the nozzle. In view of the fact that hydrant is aiding the pump to the extent of 75 lbs., 170 pounds would not have to be created by the engine.

If the hydrant pressure were maintained at all times, the 500 gallon pumper (which should give 500 gallons per minute at 120 pounds pump pressure) would be able to supply two such lines as described above. This would present a total discharge of 374 gallons per minute, as a 1-inch nozzle at 40 lbs. discharges 187 gallons per minute.

ITINERARY "STOVER SPECIAL" TO THE I. A. F. C. CONVENTION

Special Train to Winnipeg, Man., Leaves on September 7, from Chicago—Fares, Time and Other Arrangements Given

A COMPLETE itinerary has been arranged for the Chiefs and others who will leave Chicago, Milwaukee, St. Paul, Minneapolis and intermediate points for the I. A. F. C. convention at Winnipeg, by way of the "Stover Special," which, as in a number of preceding years, has been arranged by Frank F. Stover, District Sales Manager of the North Central States for the Gamewell Company.

Frank F. Stover

Mr. Stover has been authorized by the President of the Great Lakes Association, Chief Peter Steinkellner, of Milwaukee, Wis., to announce that at 10:30, September 7, a meeting of the Great Lake Association will be called at the Insurance Patrol Headquarters, 100 South Desplaines Street, Chicago. This will enable those who attend to have the afternoon for anything they may wish to do in Chicago, before leaving on the special at 8:30 p.m.

Mr. Stover's circular is in part as follows:

For the accommodation of yourself and friends, arrangements have been completed with the Chicago & Northwestern Railway, the Soo Line and Canadian Pacific for Special Train, Chicago to Winnipeg, leaving from the Chicago & Northwestern Railway Station, Madison, Canal and Clinton Streets, Chicago at 8:30 p.m., Sunday, September 7, 1930, on the following schedule:

Lv. Chicago	8:30 p.m.	Sunday	September	7	C. & NW. Ry.
Lv. Milwaukee	10:55 p.m.	"	"	7	"
Lv. St. Paul	7:50 a.m.	Monday	"	8	Soo Line
Lv. Minneapolis	8:30 a.m.	"	"	8	"
Ar. Winnipeg	9:20 p.m.	"	"	8	Canadian Pac.

Our Special Train will consist of the most modern all-steel equipment, including Compartment, Drawing Room and Open Section Sleeping Cars, Observation-Lounge Car and, Dining car will be provided from St. Paul to Winnipeg, serving table d'hote breakfast and luncheon, at $1.25, and table d'hote dinner at $1.50.

Reduced Fares

The usual Convention rate of 1½ fare on the Identification Certificate Plan has been authorized for this occasion on tickets sold from Chicago, September 5th to 11th inclusive, with return limit September 18th will be, one way $29.81; round trip $44.72. Similar low fares will apply from all other points. The identification certificate which will be furnished by the Secretary of your organization should be presented to your local ticket agent at time ticket is purchased and complete round-trip ticket will be issued from starting point to Winnipeg and return.

Pullman Fares

Pullman fares from Chicago and Milwaukee to Winnipeg will be as follows:

Lower Berth $8.25; Upper Berth $6.60;
Compartment $23.25; Drawing Room $30.00.

For accommodation of those joining this special train at St. Paul or Minneapolis, Pullman seats will be assigned at a cost of $2.25.

Reservations

In order that sufficient Sleeping car accommodations may be provided and desirable space secured, will you please advise me just what space you desire reserved on the special train.

There Is No Telling Where a Firemen's Work Will End

Fire gutted the interior of apartments in the business section of Jersey City, N. J., but a fireman saved a cat and kittens as though it was part of his regular duties. Nor was that all. Milk was provided during the emergency period.

Michigan Firemen Meet at South Haven

The fifty-sixth annual convention of the Michigan State Firemen's Association was held at South Haven, Mich., on July 7 to 10, in conjunction with the annual Fire College.

Memorial services were held on Tuesday evening, July 8, at the Congregational Church. The names of departed members were read by Statistician Charles V. Lane. At the general meetings and the Fire College the program was followed throughout. An interesting round table session was conducted by Chief W. Smith, Ferndale. There were a number of instructive talks by well-known authorities in fire prevention and fire fighting.

It was decided to hold next year's convention and school at Jackson, Mich. Ludington was also a candidate for this honor, but lost out to Jackson.

The officers elected were:

President, Paul Lefke, Lansing.
First Vice-President, Archie McClellan, Port Huron.
Second Vice-President, F. F. Trombley, Sault Ste. Marie.
Third Vice-President, J. N. Clark, Zeeland.
Secretary and Treasurer, H. L. Williams, Luddington.
Assistant Secretary and Statistician, Charles V. Lane, Charlotte.

On Wednesday evening there was a banquet and dance at the Casino, and the convention closed with a demonstration of fire apparatus, followed by a boat ride on Lake Michigan.

A Case of Bad Luck for Olcott

It is rare indeed that a community has a chain of unfortunate circumstances such as befell Olcott, N. Y.

A small child shot a firecracker which alighted on the counter of a store stocked with fireworks for July Fourth. Instantly fireworks exploded in all direction and the building started to burn.

Olcott Fire Department trucks balked and could not be started. A call was sent to Newfane for aid. There the fire siren would not sound, and in the meantime the pyrotechnic display in Olcott continued. Aid was asked from the U. S. Coast Guard at Olcott Beach and from the crew of a sub-chaser. While this was going on, Olcott firemen arranged for a tow car to move the apparatus, and in Newfane the operator was calling as many firemen as she could reach.

The fire was finally extinguished, in spite of all the incidents.

Fire House Opened in Greentree, Pa.—Volunteer firemen of Greentree, Pa., have opened a new fire house. Thirty volunteer companies from various parts of Allegheny County took part in the ceremony.

Injunction Halts Apparatus Purchase—A taxpayer suit was started to prevent Margretta, Ohio, from purchasing new fire apparatus. The taxpayer claims that the township has sufficient apparatus.

PHILADELPHIA HAS THREE BAD FIRES IN THREE DAYS

A Three, a Two and a Five Alarm Fire in That Period—Chief Davis Was Injured in Cooperage Blaze

PHILADELPHIA suffered three large fires in as many days in the latter part of July. The first of these was a three alarm blaze, the second, of two alarm proportions and the third necessitated the sounding of five alarms and taxed the resources of the Fire Department under Chief

Philadelphia Firemen Attacking a Five Alarm Blaze in the Heart of the Business Section

Ross B. Davis to its utmost to prevent the spread to surrounding structures.

Nearly 10,000 barrels, saturated with tar and oil, were burned and several small buildings destroyed in the fire which swept the Sukonik Cooperage at Wolf and Meadow Streets, just after 11 a.m. on July 21. The plant covers an entire block and the flames started in the cooper shop, a small one story building. After the fire burst through the roof of this structure, it spread rapidly to the other buildings of the plant. When the thousands of barrels, piled eight and ten high, caught fire, a dense smoke resulted, which increased the difficulty of fighting the blaze.

Chief Davis was hurt when the roof of a small corrugated iron building collapsed. A supporting timber struck the Chief a glancing blow on his helmet and grazed the side of his face. He was stunned for a moment, but recovered at once and returned to the command of the fire forces.

The plant of the Komo Chemical Company was threatened at one time, but was saved by several lines directed on the building. There were thousands of gallons of chemicals stored in this establishment, and if ignited would have greatly increased the difficulties in fighting this fire. The Fireboat "Hampton Moore" assisted in the fire fighting with a high pressure line stretched 500 yards from the Delaware River.

The two alarm fire was in the northwestern section of the city, in Manayunk. The building involved was occupied by Geo. Davis's Yarn mill. Two alarms were sent in before the fire was under control. This fire was on Tuesday, July 22.

On Wednesday, July 23, a five alarm fire occurred in the business section of the city. The fire was discovered in a four story building on the northeast corner of 8th and Arch Streets. The first alarm was sent in to the Electrical Bureau from Box 713, at 2:22 p.m., standard time.

The companies arriving found the fire in the four story building and were busily engaged in putting it out, when fire was discovered in the next building. The fire was on the fourth, fifth and sixth floors of the next building and in a very short time the second alarm was sent in at 3:09 p.m., the third at 3:12, the fourth at 3:16 and the fifth at 3:19.

Many workers in the six story building were assisted or carried out of the building. Smoke poured all over the section and greatly hampered the firemen in their effort to get control of the fire. The roof of the building collapsed shortly after the fifth alarm and parts of the brick and stone crashed to the street, endangering fire apparatus and men. The scene was one of confusion for the entire afternoon. Many firemen were injured in different ways, but there were no serious accidents.

High pressure and low pressure water lines were on all sides of the building and in addition Water Tower No. 3 was in operation in front of the building. Police lines were erected one square each way from the fire and only firemen and those with badges were permitted within the lines. For a long time it looked as if the front of the building would fall to the street. The rear of the building came out on a small street ten feet wide, and the back wall came down from the fourth floor to the roof, choking that street with debris.

Across the street a large water tank on the roof of a building caught fire but firemen quickly put it out. Right at this location a subway is in the course of construction, running south on 8th Street. Work was suspended at the start of the fire, and in short order water from the many lines was pouring into the excavation, flooding it, and weakening the supports to the buildings in the vicinity. Many of the city's officials were at the fire, including Director of Public Safety Lemuel B. Schofield. The fire is believed to have started in the loft of the building on the corner at 735 Arch Street and later involved the building at 731-33 Arch Street known as the Moskowitz Building. The top floor of 735 Arch Street where the fire started was vacant, the third floor was occupied by a novelties firm, the second floor by the Star Pleating Company and about five small stores on the first floor.

In the adjoining store the first, second and fourth floors were Moskowitz Brothers, dress manufacturers, the third floor was occupied by Astor & Kramer, dress and cloak manufacturers, and the fifth floor by S. Braunfeld, an underwear manufacturing establishment. On receipt of the second alarm, the Second Alarmers responded and remained on the

Another View of the Philadelphia Five Alarm Fire at Its Height. Note Construction Work in Street in Front of Building

fire ground, serving the exhausted firemen cold limeade, chewing tobacco and seltzer water, until the last engine company took up around 1 a.m.

EDW. H. SPRANGERS.

Bridge in Boston Destroyed by Fire

On June 6 in the late afternoon the Boston Fire Department was called upon to fight a blaze that broke out on the L Street Bridge at the end of Summer Street Extension in South Boston. The bridge, which carries trolley tracks and a highway, is a connecting link between the city proper and the City Point district.

The bridge is surfaced with six-inch granite blocks under which is a two-inch cushion of sand. The sand rests on waterproofing which is laid over 6 by 10-inch planking on 12 by 14-inch stringers, all of hard pine. The bridge was built about thirty years ago.

The fire originated near the draw and spread rapidly in both directions, the flames making rapid headway along the timbers beneath the bridge.

District Chief M. J. Teehan, Engine 2, Ladder 19, and Engine 44 (fireboat) responded to a still alarm at 4:54 P. M. A bell alarm was sounded from a box at 4:57, followed by a second alarm at 5:00 and a third at 5:12. At 6:28 P. M. an alarm was sounded to bring additional apparatus in to the south side of the fire.

It was impossible to get effective streams on the heart of the blaze and the firemen worked for hours in dense smoke. The small boats from the fireboats and rowboats were used to take lines under the bridge. Closely set piling and a stiff wind added to the difficulty. The public works department was called upon for pneumatic drills to rip up the cobblestones.

Many firemen had narrow escapes when the draw and sections of the bridge collapsed. About 300 feet of the bridge was destroyed with a loss estimated at $300,000.

The department laid 17,150 feet of 2½ and 3-inch hose and was engaged at the fire all night. A special call was sent for an additional fireboat, Engine 47. A navy tug also aided.

The officers at the fire were Commissioner Edward F. McLoughlin, Chief Henry A. Fox, Acting Asst. Chief Power, Deputy Chief Kelly, Acting Deputy Chief Good, District Chiefs Kenny, Watson, Teehan and Coughlin, and Acting District Chief Chittick.

HARRY BELKNAP.

Fire Department Called When Building Crashes

By means of peculiar creaking and cracking noises, the occupants of a seven-story warehouse in New York City, were warned to flee from the building just before a crash took place. The entire building crumbled and the contents of the warehouse were caught in the wreckage. The wreckage was carefully searched for fear that some passersby may have been trapped by the shower of bricks.

Fur Dressing Can be Far From Gentle Work

One man was killed by an explosion generated in a fur dressing machine at a plant in Paterson, N. J. He was blown through the factory wall and five others were injured. The force of the blast can best be judged by the large hole torn in the building.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Week Ending July 25	Loss in Thousands of Dollars
AURORA, IND.—Business Property	80
WAXAHACHIE, TEX.—Garage and plant of Coca-Cola Co.	25
HERNDON, W. VA.—Mill property of Guyan Lumber Co.	400
CARLSTADT, N. J.—Plant of Burkhardt Paper Co.	60
DELPHI, IND.—Stock barn of E. W. Bowen	25
PARIS, ALA.—Novelles Galleries, department store	800
DUBUC, SASK.—Dubuc Hotel of Lee Brothers	35
ALBANY, N. Y.—Lumber yards of F. F. Grannel Co.	200
REGINA, SASK.—Maple Leaf Dept. store damaged	80
MERIGOLD, MISS.—Post office and adj. property	25
OAKTOWN, IND.—Business property damaged	25
HALFMOON BAY, CAL.—Store of Halfmoon Bay Mercantile Co.	80
MIDDLETOWN, CAL.—Presbyterian Church and adj. property	25
IONE, CAL.—Commercial hotel bldg. damaged	25
COLLEGEVILLE, ARK.—Girls' Industrial Home destroyed	40
MASSENA SPRINGS, N. Y.—Hames Lumber yard and adj. property	45
VANDALIA, W. VA.—Charleston Boiler Works, adj. structures	40
NARRAGANSETT, R. I.—Surf Hotel destroyed	45
PAW PAW, MICH.—Basket factory of Fruit Growers Package Co.	150
PHILADELPHIA, PA.—Bldg. occupied by Sukonik Cooperage Co.	25
KEEGAN, ME.—Madawaska Lumber Mill destroyed	400
MANCHESTER, ME.—Property of W. E. Weed	25
RACINE, WIS.—Liberal Clothing Co., adj. property	25
BELLEVILLE, ILL.—Mine property of Perry Coal Co.	150
DALTON, OHIO—Business block destroyed	25
FORBESTOWN, CAL.—Stowe Mansion destroyed	40
CLARKSON, MO.—Bldg. of Tatum Bros.	25
GATINEAU MILLS, QUE.—Fiber plant of International Mills	40
N. BALTIMORE, OHIO—Bldgs. of N. Baltimore Grain Mill	40
DIXON, ILL.—Property on Butler and Pomeroy farms	45
EASTHAMPTIN, MASS.—F. E. Lyman dairy barn	35
NEW YORK, N. Y.—Garage of Motor Club Transportation Co.	35
LYNBROOK, L. I., N. Y.—Feiseler lumber yard damaged	65
BERMA, MONT.—Establishment of Berma Commercial Co.	25
MINOA, N. Y.—Post office and adj. property	40
S. DALLAS, TEX.—Bldg. of Columbian Club	100

Week Ending August 1	
UTICA, N. Y.—J. Wool and Louis Smith Stores	25
RICHLAND, MO.—Gem Theatre and adj. property	45
DULUTH, MINN.—The Spaulding Hotel destroyed	80
BIG SANDY, MONT.—Pratt and Englund garage destroyed	35
WALTHAM, MASS.—Property occupied by Farnum & Davis Wks.	25
SANGER, CAL.—Garage and salesroom of J. E. Starnes	25
MERCED, CAL.—Yards and sheds of Cross Lumber Co.	65
SCOOBA, MISS.—C. E. Dansby store, adj. bldg.	25
MARTINS FERRY, OHIO—Plant of Sulphio Company	65
NEW BRUNSWICK, N. J.—Property occupied by Brunswick Bowling Alleys	40
BALTIMORE, MD.—Bldg. occupied by Peoples Drug Store	65
OKLAHOMA CITY, OKLA.—Leach Paint Store	30
BUFFALO, W. VA.—Business and residential property	65
LEXINGTON, N. C.—Foundry of C. M. Thompson Sons	40
WACO, TEX.—Plant of Crawford-Austin Tent Co.	400
TOLEDO, OHIO—Brickyard of Collingwood Brick & Clay Co.	100
BARBOURSVILLE, VA.—Williams Bros. store destroyed	25
S. NORFOLK, VA.—Mill of Muddleston Mahogany Co	80

ST. LOUIS, MO.—Plant of Volland Scenic Studios..... 40
WILMINGTON, ILL.—Paper mill of Orenda Corp. 80
KANSAS CITY, MO.—Plant of Southwest Wire & Iron Works.. 45
OWENSBORO, KY.—Whses. of Rock Springs Distilling Co..... 50
VANCOUVER, B. C.—Whse. of Critchley, Hope & Co., Ltd..... 25
SHREWSBURY, MASS.—Property on E. D. Ward estate..... 25
BOSTON, MASS.—Property of J. T. Barton, Newberry St..... 600
FITHIAN, ILL.—Farm property of J. R. Thompson estate..... 65
SALISBURY, MD.—Whse. of D. J. Elliott & Co..... 25
SOUTH RIVER, N. J.—Factory of Leo Wladyke..... 80
OCONOMOWOC, WIS.—Stables on Fred. Pabst farm..... 80
GASTONIA, N. C.—Bldg. occupied by Reid Wholesale Grocery..... 35
FAIRFIELD, MD.—Bldg. of U. S. Industrial Chemical Co..... 200
EPPS, LA.—Two business buildings destroyed..... 25
EVANSTON, ILL.—Home of B. C. Garrison damaged..... 60
RHEIN, SASK., CAN.—Rhein Hotel damaged..... 25
LINCOLNTON, N. C.—Barn of R. Corriher, adj. property..... 40
KIRKVILLE, N. Y.—Plant, yd. and equip. of Central N. Y. Face Brick Co. 85
DANA, IND.—Bono coal mine destroyed..... 30
WASTA, S. D.—Coleman garage and 12 cars destroyed..... 25
COEUR D'ALENE, IDAHO.—Part of city dock destroyed..... 25
HOBART, WASH.—Sawmill, dry kilns, etc., of Wood & Iverson destroyed 250

N. Y. FIRE COMMISSIONER SENDS "CLEAN UP" LETTER TO HOTELS

Commissioner John J. Dorman Urges New York Hostelries to Take Stock of Their Fire Hazards—Offers Cooperation

By WM. JEROME DALY

A LESSON in fire prevention, applicable to almost any establishment, is contained in the recent letter addressed to the manager of all the hotels in New York City by Fire Commissioner John J. Dorman. In it, Mr. Dorman points out that the summer season should be taken advantage of to "clean up" and he emphasizes the hazards of hotels from a fire protection standpoint. The letter:

"Dear Sir:—Summer is probably your slack season, and gives you time to take stock of your building and fire equipment. Make a personal inspection of every nook and corner. Don't delegate the job. If you have a good dependable man, take him with you.

"Begin at the roof and list the defects of your fire fighting equipment, and the causes of fire, thus:

"On the roof and pent houses look for combustible rubbish. Remove it. Check the water in the standpipe tank and the high and low alarm. Look at the carpenter shop for shavings, badly constructed glue pots, oily rags, etc. Look at the paint shop for paint, paint soaked rags, paint cans scattered around on the floor or on wood benches or shelves. All paint should be in strong metal cabinets. See if unnecessarily large quantities of turpentine, oils, and paints are carried. Your hotel is no place for large stocks of that sort.

"Find out where insecticides and cleaning fluids are kept. Try the housekeepers' rooms, the stewards' quarters and the paint or carpenter shops, and when you find them take the trouble to ascertain if they are the safest or the most dangerous fluids in the market for that purpose. Watch out for benzine, gasoline, naptha and other highly inflammable liquids. You can find safe substitutes for all.

"You should look at the tailor shop, and see what kind of cleaning fluids are used, and if the electric or gas pressing irons are properly protected. Visit the hangout of the housemen and others—probably the furniture storeroom. See if there is any smoking going on there. Look into every clothes closet used by employees, and have them cleaned out. Broom and mop closets will bear inspection, too.

"Have you the proper wall signs indicating the direction of exits? And have you a small floor plan showing the exits on the back of each bedroom door? The law requires that. See that the stairs are well lighted and that there are good lamps in the sockets. Don't be surprised if you find some of them missing or burnt out.

"On every floor get somebody to take down the fire hose and examine it for holes. Check its condition near the valve where it rots from brass polish. See that the valve wheel, spanner and nozzle are in place and that the rack permits the rapid release of hose, and that the hose is not tied on the rack to hold it in place.

"Get the electrician to test the alarm. Try to understand it yourself. While testing the alarm see how the fire brigade operates. If you have not already trained your employees in this work, begin now.

"Get the electrician to give you a detailed report on the conditions of switches, curling iron heaters, radio wiring, portable lamps and temporary connections, fuses, motors and dynamos, overloading of circuits, worn or inferior material and wiring, batteries and bells. Don't take a blanket O.K.—get the facts, even if you have to call in an expert. A handy man on electrical work may be a dangerous man. He should know and follow the code. Question him.

"Have the engineer go over the entire fire line system with you. Check his monthly reports. See if he holds a certificate as a standpipe operator. He should. If he does, he is responsible for the maintenance of virtually all fire appliances, such as standpipes, fire alarms, chemical extinguishers and the training of an emergency fire brigade.

"Now look at the basement or cellar. Have you a permit for the ice machine? Or have you still a list of violations? If you have the latter, consider your responsibility as to the safe working of this machine. Look at the boiler room, the pump room and the engine room. Clean them up. Sometimes they need it. When were the chimneys and flues cleaned? You should know. Get all wooden closets out of the basement. Have oily and greasy rags kept in metal cans with covers. Be very sure to look at the room where waste paper is baled. Look at the incinerator. A few sprinkler heads connected with the water system would be invaluable here. Your own mechanic can install them. A sprinkler head is always on the job.

"See that your watchman service extends to the basement. And further, be sure he is instructed in the rudiments of fire prevention. A good watchman can very easily be developed into a good inspector. Go over the stoves and ranges in the kitchen. Order all grease removed. It can be done. Look under the hood over the fire places for grease. Clean it. A perforated steam line is one of the best means of putting out a grease fire here.

"In other words, do general inspection work. Make a list of the defects you find. Have them re-inspected again and again, until they are finally removed. If you need any information on fire prevention and protection, 'phone 'Worth 4100,' and explain what you want. Or write or call at Room 1100, Municipal Building. In this way you will get all the information necessary, and the Bureau of Fire Prevention will be very glad to co-operate with you.

"JOHN J. DORMAN,
"Fire Commissioner."

Detroit Force Found Satisfactory

The Detroit Fire Department stands in the front line of the fire fighting forces of the country according to the report of the survey, test and investigation of the Fire Department recently conducted by engineers of the National Board of Fire Underwriters.

The administration and operation of the Department are appraised in the National Board's report as follows:

"The Detroit Fire Department is well organized under good supervision and commanded by competent officers; discipline well maintained; appointments under civil service rules; promotions based on seniority and record; pension provisions good; company distribution and manual strength good; apparatus of proper type and kept in excellent condition; waterfront and shipping well protected by fireboats; engine capacity adequate and supplemented by a high pressure system in congested value districts; minor equipment standardized; several rescue squads with special equipment; hose supply ample; powerful stream appliances sufficient drills and training excellent; response to alarms well arranged; fire methods modern; inspection of buildings properly made; department records good."

Of the fire force in general the report states: "the members show proper deference to superior officers and the discipline is excellent."

A table in the report indicates that the thirty-six chief officers of the department have had long experience, that no chief officer has been in his present rank longer than seven years and only two chief officers are more than sixty-two years of age and more than forty years in the service.

Of the conflagration hazard, the report sounds the following warning:

"In the central and northern portions of the congested value district a considerable proportion of the construction is fire proof or sprinklered and there are a number of wide streets and open spaces so that fires should be confined to the group or block of origin. In the southern portion of the district older buildings, weak in fire resistive features, greatly predominate and fires could cross one or more of the narrow streets and involve several blocks. The fire fighting facilities are good, so that fire should not involve any considerable portion of the district. Serious individual to group fires are probable in the manufacturing and minor mercantile districts. In residential districts, there is the usual hazard of flying brands due to shingle roofs."

Although characterizing the average 8,471 fire annually as "very high," the fire underwriters regard the per capita loss of $3.07 as "moderate" and the average loss of $489 as "low" since the previous survey and report were made in 1923. In seven years the personnel of the department has been increased by 400 members, making its total roster 1,826, twelve additional engine companies, eight ladder trucks, one rescue company and a new fireboat have been added to the equipment. A new drill school is now in course of completion.

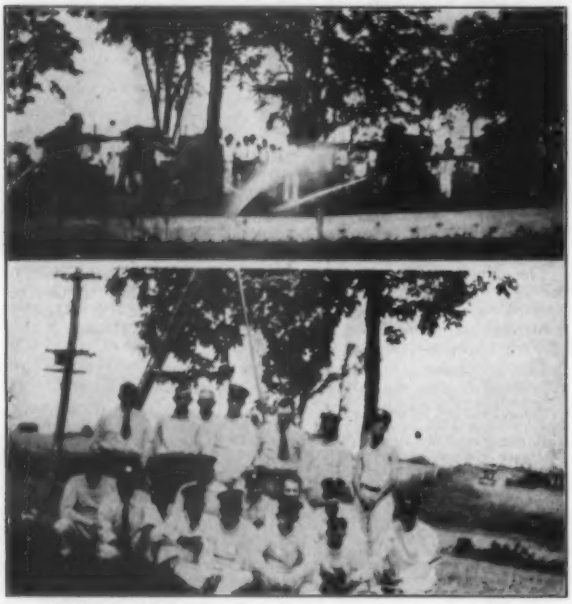
Traffic conditions and automobile parking are struck at in the report as—"the greater hindrances to fire apparatus in response to alarms."

Linwood, N. J., Has New Pumper—A new Hahn 500-gal. pumper has just been delivered to the Fire Department of Linwood, N. J.

Chenango Co. Association Meets Aug. 6-7—The eighth annual convention of the Chenango County Firemen's Association will be held at Earlville, N. Y., on August 6 and 7, according to Chief H. C. Bartlett, the President, Oxford, N. Y. The association, which has a membership of nineteen fire departments, comprising a total of thirty-four companies, holds monthly meetings eight months of the year, convening in a different town on each occasion. The attendance runs from 75 to 250 men at each meeting. Vice-President Joseph Sullivan, of the I. A. F. C., is a frequent attendant at the meetings.

Central Illinois Firemen Meet

The Central Fire Fighters' Association, of Central Illinois, held their third annual tournament at Vermont, Ill., on Wednesday, July 23, with an attendance of some 700. The association includes in its membership the following Central Illinois towns: Bushnell, Rushville, Beardstown, Beardstown Q. Shops, Lewistown, Virginia, Mt. Sterling, Meredosia, Littleton, Astoria and Vermont. The Fire Departments of these towns are all well supplied with fire fighting equipment and help each other in case of serious fires. They meet once a month for dinner and discussion and hold an annual tournament.



Upper, Water Barrel Rolling Contest at the Tournament of the Central Fire Fighters' Association of Illinois, Held at Vermont, Ill. Lower, the Bushnell Fire Department, which Won the Cup for the Second Year

In the lower illustration, top, l. to r.—Adams, Chandler, Hornbaker, Voorhees, Ford, Korn; Middle, Albricht, Vincent, Kugler, Mills, Chain, Dell, Fire Chief Sparks; Bottom, sitting—Schumaker, McHenry, Lomax, Brausew.

In the various contests, of which there were eight, all of the events but two were carried off by the Bushnell Fire Department. The Vermont Firemen won the Barrel Rolling Contest and the Water Fight. Out of a possible 40 points, Bushnell won 36, thus retaining the cup for another year. If they win it next year, it will become their property. Vermont finished second, with 15 points and Rushville third with 14 points. A. V. Rothwell, Apparatus Engineer, Peoria, Ill., acted as judge for the contests, on the invitation of the association.

The Bushnell Band furnished music for the tournament.

Book on a Celebrated Arson Case

Abraham Kaplan and Samuel A. Berger, counsel to the Special Committee of the New York Board of Fire Underwriters have published Davidson (Davidson Press, No. 175 Varick Street, New York) the "The Dachis Case" an unsuccessfully executed arson plot and fire for which Louis Dachis and four others are now serving terms in prison.

The book is a resumé of one of the most brazen plots ever attempted to recoup gambling losses by filing false claims for insurance for goods allegedly destroyed by fire. The plot was supported by fraudulent books and records of suppressed sales and false purchases. The volume should be especially interesting to fire, police and insurance officials, as a narrative describing the outstanding incendiary conspiracy of the present time.

WM. JEROME DALY.

New House Opened in Brockton, Mass.—The new engine house, Station No. 2, has been opened in Brockton, Mass.

Illinois Fire Prevention Proclamation

"To prevent fire is the personal responsibility of everyone. It should be taken seriously."

This slogan, used by Governor Emmerson for the 1930 Illinois Fire Prevention Week Proclamation strikes at the heart of the fire prevention problem and will be widely used during the Illinois Fire Prevention Week campaign.

The proclamation sets out that there were 417 deaths by fire in Illinois last year and a property loss averaging $2,000,000 a month. The loss of life is featured also in an attractive two color poster which will be put out by State Fire Marshal S. L. Legreid. A cut showing the rescue of little children by firemen will be the outstanding feature of the poster. The proclamation is in part as follows:

"Fire authorities agree that fully ninety per cent of our fires are preventable through exercise of ordinary care. Our record, therefore, is one of reproach and is a challenge to our citizenship.

"Illinois has pioneered in many things and the building up of our resources is a tribute to the diligence and thrift of those who made our State great. Conservation of resources, both human and material, always has been one of the first obligations of mankind, and our reckless waste of both through unnecessary fire calls for energetic action.

"I appeal for the cooperation of all citizens in the interest of avoiding fires, not only during this week, but at all times. I urge that mayors, fire chiefs, Chambers of Commerce, civic organizations and schools lend their efforts to a practical program of education in their respective communities in the interest of reducing the causes of fire."

Newest Company in Morris Township

The Fairchild Fire Company is the newest unit to be formed in Morris Township, N. J. There are four other companies.

The fire house has space for three pieces of apparatus. Doors leading from the apparatus room to the street are arranged to slide overhead. On the second floor is a large meeting room and a kitchen, while on the third floor is a balcony.

At present the company has two pieces of apparatus, one a 750-gallon pumper and the other consisting of a home-made body mounted on a Ford chassis. The latter apparatus consists of two 40-gallon chemical tanks to be used in fighting forest fires. It will also have a gasoline engine connected to a generator for operating floodlights.

House of Fairchild Company

Bridgeport, Conn., Orders Pumper—Bridgeport, Conn., has ordered a 1,000-gallon Mack pumper.

Auburndale, L. I., to Have Fire House—Bids were opened on a fire house for Auburndale, L. I., part of New York City. The lowest bid was $64,670.

CHIEF'S NIECE AWARDED PRIZE FOR FIRE PREVENTION ESSAY

Considered by Dominion Officials as One of the Best of Its Kind —Author a Graduate Nurse

AN essay on Fire Prevention, written by Miss Mary Murphy, of Marmora Township, Hastings County, Ontario, Canada, a niece of Chief Joseph Judge, of the Deloro Smelting and Refining Company, Ltd., of Canada, was awarded a prize on the occasion of the graduating exercises held at the Hotel Dieu, Kingston, Ont. The presentation was made by Chief James Armstrong, of Kingston, Ont., Secretary of the Dominion Association of Fire Chiefs. In making the presentation the Chief said that the essay had aroused the admiration of the Dominion and Provincial officials, who considered it the finest thing of its kind they had ever read. The essay in part was as follows:

FIRE PREVENTION

Prize winning essay by Miss Mary Murphy.

Fire has often been regarded as our most formidable enemy. It has caused the death of many inhabitants and the destruction of many buildings, large and small every year.

On account of this terrible loss of life and property, there have been many conveniences placed in public buildings to help prevent fire and loss of life. In our public buildings of today, there are more than one exit, fire escapes and fire extinguishers. Also we have the small fire extinguishers which contain chemicals, which will overcome a small blaze and thus perhaps prevent the total destruction of the buildings.

In order to prevent fires, the public also should be very careful and carry out all the rules laid down by the Fire Department. Especially does this apply to picnickers and campers. They should be very careful when building camp fires that there is no likelihood of the fire spreading. Also they should be very careful to extinguish the fire entirely, when leaving or breaking camp, so that there will be no smoldering embers to cause a fire which might develop into a large fire. These campers and rangers and those walking through the woods, should see that they throw no glowing matches or cigarette stubs on the ground, so that there will not be any danger of igniting the dry grass and leaves. In such a way huge forest fires have been started and much of our fine young timber has fallen before the fiery tongues of the fire.

Now we have a well organized Fire Brigade, which faithfully carries out the work of Fire Prevention with untiring zeal. There is a fire station generally in the heart of the city or town and at every street corner there is an alarm box, from which a speedy message is quickly carried over the wires to the station, then, quickly our ever-ready firemen, swing open the doors and rush to the scene of the fire. Along the streets are hydrants to which the hose of the fire engine can be attached and thus water can be pumped onto the fire. This quick, easy method of alarm, water supply and our modernly equipped outfits, well looked after and attended by our willing firemen, have done much in the last years to prevent the spread of fire, and they have saved many lives which may have been doomed to destruction.

Through our large forests and throughout the mountainous country there are observation stations and lookouts by means of which the country can be seen for miles around. At the least sign of smoke in unhabited places, rangers mounted on horses are quickly sent to investigate or if too far away, a message is quickly sent to the nearest place in the vicinity of the smoke and investigations are promptly made. If the smoke proves to be a forest fire or such like, helpers are quickly assembled and the fire bravely fought and kept in check as much as possible. Some observation stations, have an airplane or two, which hourly, circle over the country looking for any signs of fire or any indications of it. Thus by this system of lookouts and rangers, many fires which might have devoured vast timber lands and swept with them towns and villages and taken their toll of human life, have been checked before much damage was done.

Inflammable substances and explosives are a very grave problem which have to be considered in our work of Fire Prevention. Suitable warehouses should be built for the storing of these substances. They should be in a cool, dark place entirely apart from the machinery and boilers of any factories which may store them. These warehouses should be kept locked and no one allowed to enter while smoking. Especially should we be careful when handling inflammable substances or explosives. Thus in our work of fire prevention, we should constantly be careful when handling these substances or when in their vicinity.

We, now, have a week, set aside each year, called "Fire Prevention Week." This movement gives fair promise of aiding in the noble work of fire prevention. During this week, prominent men in the fire departments visit the schools and public halls, where they outline very clearly the damages and loss of life, yearly exacted, by fire and the various means adopted in the prevention of fire. Thus they bring to the minds of the people the startling facts of these losses and awaken in their spirits an answering note of co-operation in the ever present warfare waged against fire and in which we are constantly creeping inch by inch towards goal.

Also in every town and city of today there is usually a Boy Scout organization. The Boy Scouts are taught the rules relating to tourists, campers and rangers. They are taught to be very observant and careful; to be always on the watch for fires and not through their own thoughtlessness cause fires. They are taught the dangers of bonfires and campfires. Thus by teaching our young boys of today, the young men of tomorrow, we greatly help in the work of fire prevention.

In conclusion, I say that it is the duty of every loyal citizen of Canada, or any other country or dominion of the world to realize and put in practice the rules and duties demanded in the prevention of fire. If everyone would be careful not to cause fires and to send in an alarm whenever a fire breaks out, the loss from fire yearly would be considerably less. Thus by these methods and modern conveniences and modern movements and last but not least by the untiring work of the firemen organized by an able chief and connected with the head fire department of the country, we hope to lessen our yearly damages and toll of human life by our noble and faithful efforts in the work of "Fire Prevention."

Forest Fires Controlled by Small Pump

On May 3 last, with two men and seven Boy Scouts assisting him, J. E. Bushnell of Brattleboro, Vt., stopped a very severe forest fire that had jumped several back fires and was being fought by about fifty men. It had burned over about 75 acres of forest and brush land when he arrived, armed with three Indian fire pumps. The pumps were operated against a wall of flame driven by a high wind, but in about one and a half hours, the last vestige of fire had disappeared.

Portable Fire Pump

A similar occurrence was that in Nevada City, Cal., in which a heavy growth of grass became afire, and the Fire Department, under Chief Miles G. Coughlin, was called to extinguish the blaze. According to Chief Coughlin the position of the fire was such that the department would have had to lay two or three thousand feet of hose to properly cope with the fire. In this emergency two Indian pumps were requisitioned and within a reasonable time the fire was out after a hard fight, and a large property loss was averted. The pumps are made by D. B. Smith & Co., Utica, N. Y.

Second Alarmers Answer Foundry Alarm

Four men were injured during the course of a three-alarm fire that involved the Stanton Forging Company in Camden, N. J. Fire started after a series of explosions of undetermined origin. All Camden apparatus was called to the scene by the three alarms that were turned in within short intervals.

After receipt of the third alarm, the Philadelphia Second Alarmers were notified by telephone and a request was made for them to bring the coffee wagon over to the fire. This was done promptly. For nearly two hours the members served coffee or cooling drinks of seltzer water and lime punch.

EDWARD S. SPRANGERS.*

Fire Chief Has Business Boom

There is an object lesson to the following story. The head of a volunteer fire department while he must be an efficient fire fiighter should not be too aggressive a business man.

Chief Hermann Galau was a builder and decorator in Thuringia, and in addition for the past eight years headed the volunteer fire department. His pay as fire chief was £3 a year, plus ninepence an hour for duty at fires.

Many suspicious fires were reported during the last year. After service at these fires, Galau submitted a bid for restoring the property destroyed. He obtained a considerable amount of work in this way and then the public realized that the Chief was reaping his monetary rewards coming and going.

A watch was kept of this most ambitious chief. He is now in jail on a number of arson charges.

Springfield, Mass., to Erect Fire House—Contracts have been awarded for the erection of a fire station in Springfield, Mass., to cost about $50.000.

FIRE PREVENTION ORDINANCE FOR CITIES AND TOWNS

It Establishes Bureau of Fire Prevention—Prescribes Regulations for Hazardous Materials and Processes

FOLLOWING is the continuation of a Fire Prevention Ordinance which has been prepared by the Engineers of the National Board of Fire Underwriters and is recommended by the organization for adoption by cities and towns. While it is not expected that in all cases smaller cities will find need for an ordinance of such length, it is recommended by the Board that a complete set of regulations be adopted in all cases, for even though there may be no immediate need of regulation of a particular hazard, every growing community is sure to have these hazards introduced sooner or later, and it is better to be prepared for them than to develop unrestricted and then try to regulate them. The ordinance will be published in its entirety serially in FIRE ENGINEERING:

106. In determining the flash point of flammable liquids, either the Elliott, Abel-Pensky or Tag. Closed Testers shall be used, but the Tag. Closed Tester (standardized by the United States Bureau of Standards) shall be authoritative in case of dispute. All tests shall be made in accordance with the methods of tests as adopted by the American Society for Testing Materials.

107. The Director of Public Safety, the Chief of the Fire Department and the Chief of the Bureau of Fire Prevention shall act as a Committee on determination, and specify any new materials, processes or occupancies, and trades which shall require permits, in addition to those now enumerated in this ordinance. The Chief of the Bureau of Fire Prevention shall post such list in a conspicuous place in his office, and shall also maintain in his office details and descriptive drawings showing approved and acceptable methods of storing, handling or protecting such materials as shall be deemed as requiring a permit.

108. The intent of this ordinance is to safeguard and restrict the storage, handling and use of dangerous and hazardous materials to a reasonable degree with respect to injury to persons and destruction of property. The chief of the Bureau of Fire Prevention shall maintain a public file of the Regulations of the National Board of Fire Underwriters, which shall be deemed as advisory requirements to this ordinance insofar ts they can be applied to each particular installation for which a permit is required.

109. The Chief of the Bureau of Fire Prevention shall have power to modify any of the provisions of this ordinance upon application in writing by the owner or lessee, or his duly authorized agent, when there are practical difficulties in the way of carrying out the strict letter of this ordinance, provided that the spirit of this ordinance shall be observed, public safety secured, and substantial justice done. The particulars of such modification when granted or allowed and the decision of the Chief of the Bureau of Fire Prevention thereon shall be entered upon the records of the department and a signed copy shall be furnished the applicant.

110. Before permits may be issued, the Chief of the Bureau of Fire Prevention, or his assistants, shall inspect and approve the receptacles, vehicles, buildings or storage places to be used.

111. All applications for permits required by this ordinance shall be made to the Bureau of Fire Prevention in such form and detail as it shall prescribe.

112. Every permit granted by the Bureau of Fire Prevention under the provisions of this ordinance shall be for such period as the Chief of the Bureau may determine, not to exceed one year. Such permit must at all times be kept on the premises designated therein, and shall at all times be subject to inspection by any officer of the fire or police departments.

113. One permit only shall be required by retail establishments dealing in, or manufacturing plants using, two or more flammable combustible or explosive materials to be kept in the establishment at any one time.

Part 2. Explosives.

201. The term "explosive" or "explosives" whenever used in this ordinance shall be held to mean and include any chemical compound or mechanical mixture that contains any oxidizing and combustible units, or other ingredients, in such proportion, quantities or packing that an ignition by fire, by friction, by concussion, by percussion, or by detonator of any part of the compound or mixture may cause such a sudden generation of highly heated gases that the resultant gaseous pressures are capable of producing destructive effects on contiguous objects or of destroying life or limb.

202. Nothing in this part shall be held to mean and include any small arms ammunition or signal rockets, or devices or compositions used to obtain visible or audible pyrotechnic effects, which are covered in Part 3.

203. It is prohibited for any person to manufacture any explosives, except that any explosives may be manufactured in the laboratories in colleges and similar institutions for the purpose of investigation and instruction.

204. It is prohibited for any person to transport or carry any explosive in or upon any public conveyance which is carrying passengers for hire.

205. It is prohibited for any person to have, keep, use, store or transport any explosives, except under permit therefor.

206. It is prohibited for any person to have, keep, store, sell, offer for sale, give away, use, transport, or manufacture any of the following explosives in any quantity: Liquid nitroglycerine; high explosives containing over 60 per cent of nitroglycerine (except gelatin dynamite); high explosives having an unsatisfactory absorbent or one that permits leakage of nitroglycerine under any conditions liable to exist during transportation or storage; nitrocellulose in a dry condition, in quantity greater than ten (10) pounds in one exterior package; fulminate of mercury in bulk in a dry condition, and fulminate of all other metals in any condition, except as a component of manufactured articles not hereinafter forbidden; or explosives containing an ammonium salt and a chlorate.

207. Every vehicle while carrying explosives shall have painted on its front, sides and back, in easily legible white letters at least six inches high, the words, "EXPLOSIVES—DANGEROUS," or in lieu thereof shall display upon an erect pole on the front end of such vehicle and at such height that it shall be visible from all directions, a red flag with the word "DANGER" printed, stamped or sewn thereon in white letters. Such flag shall be at least eighteen inches by thirty in size, and the letters thereof shall be at least six inches high.

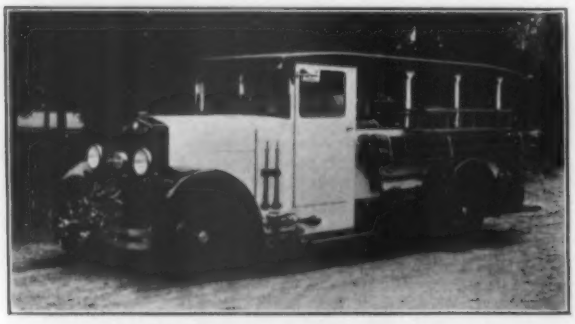
(a) It is prohibited for any person in charge of a vehicle containing such explosive to smoke in or upon such vehicle, to drive the vehicle while intoxicated, to drive the vehicle or to conduct himself in a careless or reckless manner, to load or unload such vehicle in a careless manner or while smoking or intoxicated.

(b) It is prohibited for any person to place or carry in the bed or body, or cause to be placed or carried in the bed or body of any vehicle containing such explosives, any metal tool or other piece of metal.

(c) It is prohibited for any person to place or carry or cause to be placed or carried, in the bed or body of any vehicle containing explosives, any exploders, detonators, blasting caps or other similar explosive material, or to carry in or upon any such vehicle any matches.

(d) The permit for transporting explosives shall designate the time when, and may designate the route whereon the same may be transported.

(To be continued)



Comfort in Fire Apparatus Abroad

Progress in the design of fire apparatus appears to be almost universal. Above is a photograph of a sedan type unit manufactured by the Sezione Applicazioni Industriali, Milan, Italy. The pumper is mounted on the front of the chassis. The hard suction lengths are carried on the left side of the body and on the right are the ladders. The hose is carried on the inside and there are seats for the men. On the running board may be seen part of a foam generator.

Vallejo, Cal., May Form New Fire District—Steps have been taken to form a new fire district in Vallejo, Cal.

The Round Table

(*Continued from page* 654)

tographers. However, in my opinion, such photographs are very valuable as evidence in court.

William J. Lutz, Chief, Wilmington, Del.: Photographs are taken of all activities of our Bureau such as suspicious fire settings, violations and hazards of any description, accidents and other incidents that may be of interest to citizens and of use as evidence when conditions warrant it.

Photographs are made by the office of the fire marshal.

I fail to see how any up-to-date fire department can be without any picture making equipment, for it would be impossible to present the hazardous existing conditions without a photograph. The pictures are also very valuable in accident and arson cases.

All photographs of a hazardous nature are turned over to the local newspapers so that they can show the citizens the "right way" and at the same time aiding the fire prevention work.

Charles A. McGinley, Chief, East Orange, N. J.: In many cases where a violation exists, pictures are taken, to be used as evidence when presenting our case before the trial judge.

All pictures are taken by members of the Bertillon Squad of the local Police Department. They have all modern facilities for this work and they cooperate with this department in every way.

I am of the opinion that pictures taken of fires, particularly of incendiary fires, are invaluable when presenting a case to courts for prosecution. In fact, I have had experience where pictures were valuable in helping to convict guilty persons. Pictures should always be taken immediately after the fire, before any one has a chance to rearrange anything that would weaken your case before a judge and jury.

J. L. McLane, Chief, Charleston, W. Va.: I only take pictures of arson cases or of a case that might be brought to court. All pictures are taken by commercial photographers. I believe they are very necessary when a case is brought to court.

Charles E. Hiller, Chief, Pawtucket, R. I.: Pictures are taken by newspaper men at all large fires, but only for their own use. Photographs taken at fires are useful in case of an incendiary fire.

Jeremiah McGill, Chief, Trenton, N. J.: Photographs are taken by employees of the police department. The pictures are very valuable in cases brought to court. Pictures are taken before anything is moved out of place. This proves very satisfactory in court cases, and gives a clear understanding of conditions.

A. G. Derra, Chief, Schenectady, N. Y.: Photographs and chemical analysis are taken care of by the city chemist. Photographs are sometimes taken by newspaper photographers. The pictures have not proven of any real value in securing arson convictions.

John Falvey, Chief, Terre Haute, Ind.: Our department has not taken any photographs but I believe that if we did, it would be a good move. All of our suspicious fires are turned over to the state fire marshal's office.

F. J. Myers, Chief, Toledo, Ohio: No photographs are taken. I believe it would be very beneficial to the fire department if photographs were taken of fires, violations, suspicious conditions, and matters pertaining to fires.

Joseph Waidelich, Chief, Topeka, Kans.: As a general practice we do not take pictures, but where a photograph would assist in prosecuting some case, it is taken by members of the department—ofttimes by commercial photographers. Photographs aid materially in obtaining convictions.

Thos. F. Connel, Fire Warden, Chief, Cleveland, Ohio: Our bureau has at various times taken pictures of dilapidated buildings which are considered a menace. We keep pictures to use in law suits, to show the condition of the building at the time we razed it.

W. M. Mullins, Chief, Roanoke, Va.: We do not take pictures but I see no reason why it could not be done to an advantage.

N. Belfy, Chief, Muskegon, Mich.: We have never taken photographs. If the occasion should arise, we would have commercial men do it as we do not have the equipment. We contend it would be of value in suspicious cases.

J. W. Alleman, Chief, Altoona, Pa.: Pictures are taken by commercial photographers and they are of great value in court in the case of an incendiary fire.

J. C. Sullivan, Chief, Lowell, Mass.: We hire a commercial photographer and use the prints as court evidence. This practice is very good for suspicious fire settings.

John G. Niethammer, Chief, Reading, Pa.: For some years I have had pictures taken of fires and hazards and I was foolish enough to pay for them out of my own pocket. In 1916 I took photos of hazards, fire drills, etc., and sent them to others, and I also got out a book. W. Wunder, now dead, and myself were the originators of fire prevention back in 1913.

I believe such photographs are all right and serve their purpose but I have not followed the practice for some years.

August Gerstung, Chief, Elizabeth, N. J.: I do not take photographs although I believe that it is a good practice.

J. N. Sullivan, Chief, Utica, N. Y.: Photographs are taken of all incendiary fires, fire hazards, and violations of the fire prevention ordinance. This work is done by police photographers, at the present time.

We believe that this work is of such value that we are endeavoring to secure funds so that we may keep this branch of activity within our own department.

August Emrich, Chief, Baltimore, Md.: We have taken pictures at times—the work done by commercial photographers. The pictures are valuable as a matter of record and for legal use, if desirable.

James N. Casey, Chief, Cambridge, Mass.: I have had pictures taken on different occasions of inspections made. When a person does not comply with the request to clean up rubbish that is considered a fire menace, and a complaint is made against him in court, I present the picture to the judge so that he may see the conditions.

These pictures are taken by the City Engineers Department, at my request. I have also, on some occasions, asked the newspaper photographers to take a picture, and they are only too glad to do so.

I believe that it is a good thing to have photographs as you then have real evidence if the case gets to court. Pictures cannot lie.

Lawrence E. Reif, Chief, New Haven, Conn.: Pictures are taken by a photographer who is detailed to the state attorney's office. He takes all pictures, whether for city court or Superior Court cases. I believe that photographs are a big help and they add to the efficiency of the department.

George Boughner, Chief, Grand Rapids, Mich.: No pictures are taken, but it is probably a good stunt to do so. Photographs are occasionally taken of suspicious fires by the police department photographer.

I hardly believe photographs are necessary except in cases of suspicious fires. Hazards are recorded on inspection blanks. We have inspection cards of every building in the city. By attaching the card to the original, we have a yearly record of conditions found.

Harry Voshell, Chief, Indianapolis, Ind.: We have taken photographs of dilapidated buildings and where fire hazards existed. These were taken by newspapers and published. The prints were used in fire prevention work. I believe we met with some success.

D. M. Hudson, Chelsea, Mass.: Our Fire Prevention Bureau has taken photographs of hazards to be used, if necessary, in the prosecution of court cases where fire prevention rules have been violated.

Investigators of the Massachusetts Department of Public Safety have taken pictures of conditions in this city.

Photographs, whether showing bad conditions of fire hazards or clearly and truly presenting actual conditions in crooked fires, are a great help in the presentation of court cases.

George A. Wood, Chief, Niagara Falls, N. Y.: Pictures are sometimes ordered taken by insurance companies and the district attorney. Photographs make very good evidence. We have no men assigned to this work.

EDITOR'S NOTE: Owing to a delay in receiving replies the question scheduled last week for treatment in this issue will be published in a later issue of FIRE ENGINEERING. The question was as follows: "Do you have an insurance policy to compensate volunteer firemen for injuries received in the line of duty? If not, how do you compensate your firemen and what are some of the adjustments made? What is your opinion on compensation insurance?"

Toledo, Ohio, to Erect New Station—An appropriation of $25,000 has been approved in Toledo, Ohio, for the erection of a new fire station in the West End section.

Canton, Ohio, to Buy Fire Alarm System—An ordinance was passed in Canton, Ohio, to appropriate $32,000 for the construction of a fire and police alarm headquarters building.

FIRE DEPARTMENT ACTIVITIES

East Rutherford, N. J., to Buy Pumper—East Rutherford, N. J., plans to purchase a 1,000-gallon pumper.

Ladder Delivered to Battle Creek, Mich.—A new ladder truck has been delivered to Battle Creek, Mich.

New Cars for Buffalo, N. Y.—A fleet of six De Soto coupes will be delivered to Buffalo, N. Y., for Fire Department use.

Ft. Fairfields Receives Pumper—A pumper built by D. E. McCann's Sons has been delivered to Fort Fairfields, Me.

Alhambra, Cal., to Erect Fire House—Alhambra, Cal., is looking for a site on which to erect a fire station.

Chilton, Wis., Gets Ladder Truck—A six wheeled ladder truck has been delivered to Chilton, Wis.

Grand Mound, Ia., Has New Apparatus—A chemical car has been delivered to Ground Mound, Ia.

Erie, Pa., Seeking Headquarters Site—Erie, Pa., is looking for a site for its new headquarters building.

Fire House Opened in San Antonio—A new fire house has been placed in service in San Antonio, Tex. Twelve firemen will be stationed there.

Akron, O., to Build Fire Station—Sketches have been submitted for a new fire station to be erected in Akron, Ohio. No definite action has been taken.

Work Starts on College Point Fire House—Construction has started on the new fire house for College Point, L. I. The building will cost $56,870.

Apparatus Delivered to Ripon, Wis.—A 350-gallon Boyer pumper has been delivered to Ripon, Wis. It carries two 40-gallon chemical tanks.

Hamilton, Wis., Buys Apparatus—Farmers of Hamilton, Wis., have financed the purchase of fire apparatus costing $5,700.

Youngstown, O., to Erect Fire House—Bids have been opened for the erection of a fire house in the Scienceville section of Youngstown, Ohio.

Woodland, Cal., Buys Squad Truck—With funds raised from the sale of old newspapers and magazines, Woodland, Cal., has accumulated enough to buy a squad wagon.

Canton, O., Buys Station Site—A corner lot has been purchased by Canton, Ohio, for the erection of a new fire station.

Hagerstown, Md., Has Smoke Equipment—All the fire companies in Hagerstown, Md., have been equipped with smoke masks, combination goggles and respirators.

Spokane, Wash., to Erect Fire Station—A new fire station is to be erected in Spokane, Wash., to replace the present No. 9 house. The building will be of the residential type, two stories high. It is estimated to cost $13,000.

Manitowoc, Wis., Wants Service Truck—Chief Arthur Rahn of Manitowoc, Wis., has asked the council to buy a city service truck. The city is to receive bids on a new fire alarm system.

Oakland Supports Firemen's Convention—Oakland, Cal., has appropriated $2,000 to defray expenses of the Pacific Coast Fire Chiefs' Association convention to be held in Oakland September 1-4.

Nashua, Ia., to Buy Rural Apparatus—Shares are being sold to farmers about Nashua, Ia., for the purchase of rural type fire apparatus. Non-subscribers will be charged $50 a fire call.

Chief Sennott Made Honorary Life Member—Daniel F. Sennott, formerly Chief of the Boston Fire Department, was made honorary life member of the New England Association of Fire Chiefs.

Lemoyne Considers Joint Fire Alarm Plan—Fire department chiefs of eight towns on the West Shore, attended a meeting in Lemoyne, Pa., to consider a joint fire alarm system.

West Virginia Has New Forest Protection Area—A new forest fire protection district has been formed to include the counties of Morgan, Berkeley and Jefferson, West Virginia. It will be known as the Potomac District.

Cleveland Heights, Ohio, Opens New Station—Chief Otto Romann of Cleveland Heights, Ohio, was host to forty visiting county chiefs and officials of Greater Cleveland at the opening of the suburb's new $50,000 fire station.

Glendale Firemen Entertain Friends—At a luncheon meeting of the Knights of the Round Table, members of the Glendale, Cal., Fire Department demonstrated the use of life nets, scaling ladders and other equipment in saving life at time of fire.

Plans Made for Opening of Middle Village Station—Elaborate plans have been made for the opening of a new fire station in the Middle Village section of New York City. Fire Commissioner John J. Dorman and other city officials have been invited to speak.

Mayor Host to Firemen—In appreciation of their good work in saving his business property, Mayor J. W. Lytle of Uhrichsville, Ohio, entertained the Fire Departments of New Philadelphia, Dennison, and Urichsville.

San Benito, Tex., to Buy Pumper—San Benito, Tex., has invited bids for two new 750-gallon pumpers, a ladder truck and minor pieces of equipment. The State Insurance Commission ordered that additional apparatus must be purchased because of the growth of the community.

Portland Firemen Do Carpentry Work—Labor unions are very much aroused over some members of the Portland, Ore., Fire Department doing carpentry work. Firemen who would have been assigned to crew work are remodeling an old fire station so that it can be used by the bureau hydrant crew.

Chicago Firemen Raise $75,000—The Chicago Fire Department raised more than $75,000 by the sale of baseball tickets and donations. The money will be used for relief work. Baseball games were arranged between the Chicago and Detroit Fire Departments and it marks the third appearance of the Detroit team in intercity games.

Plans Approved for Boston Fireboat—Mayor Curley of Boston has approved plans for a fireboat to cost $350,000. The boat will be 125 feet long, of 28 feet beam and will have a draught of 10½ feet. The boat is designed for a speed of fourteen miles an hour and is capable of pumping 10,000 gallons of water a minute.

Villisca, Ia., Receives Chemical Car—Farmers of Villisca, Ia., have raised funds for the purchase of a chemical car to protect rural property. The apparatus has three 40-gallon chemical tanks and minor equipment. Although purchased by the rural residents it will be manned by city firemen for country use and for city emergency use, if necessary.

Boone, Ia., Visited by Peculiar Fire—Fire broke out in at least twenty different places on a highway in Boone, Ia. The fire department was called, and small streams did little good. The entire street was then washed end to end with a heavy stream and the fires were extinguished. It is believed that some one as a practical joke had spilled a sodium compound on the street or that an amount of this substance sifted through from a farm wagon. At any rate, the firemen had an exciting time.

Chicago Forms Junior Fire Department—Four hundred boys enlisted in the Chicago Junior Fire Department. The boys range in age from ten years up, and they become full fledged members by filling out blanks in which they describe the fire hazards in their own or neighboring homes and grounds. If, upon investigation, the fire department finds the conditions dangerous, the occupants or owners are warned to correct the conditions. The largest part of the junior department is formed by Boy Scouts, who train for their fire department merit badge.

A Comedy of Unfortunate Accidents—The Chief at Sugar Creek, Ohio, now believes that it is well to have the fire apparatus in proper condition at all times. The volunteer department received its first call since last winter. Chains that were put on during the wet season, caused a small delay. On the way to the blaze which was a grass fire on the edge of the village, the gasoline supply gave out. When the pumper reached the scene, after a passing motorist brought some gasoline, citizens had beat out the fire with brooms. As the truck returned to the station, two tires blew out.

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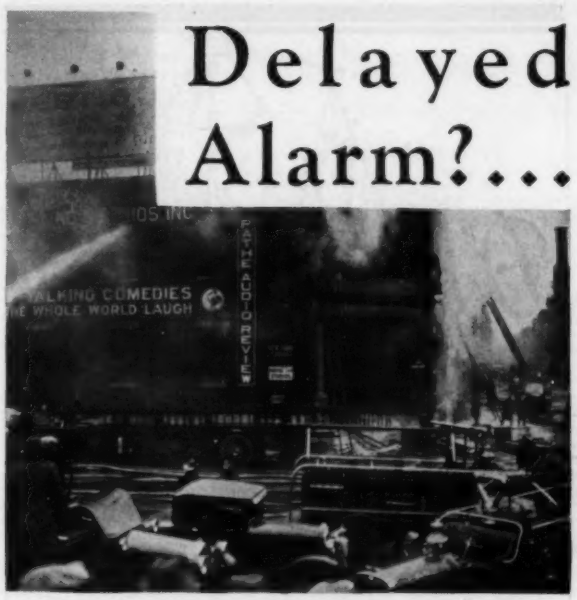

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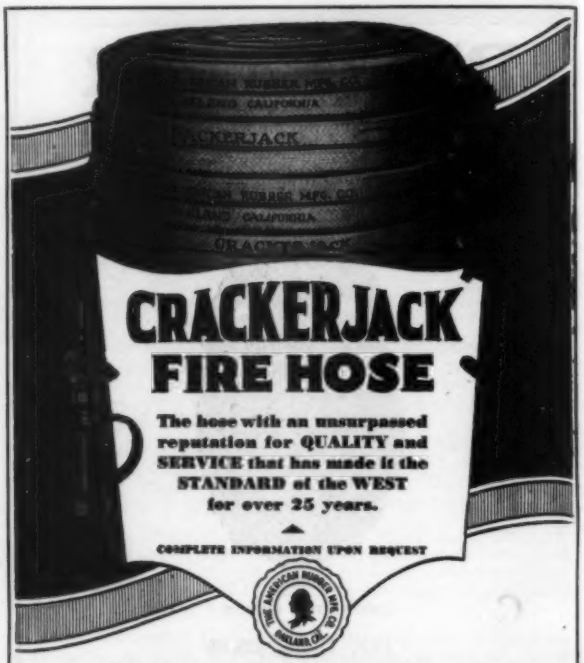
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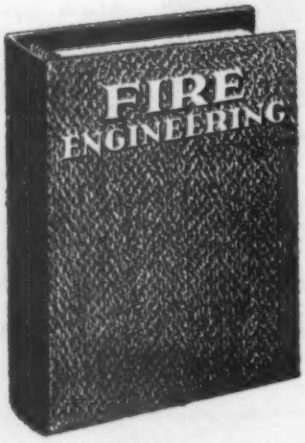

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PROPOSED IMPROVEMENTS

Milford, Ohio—A committee was appointed to investigate the advisability of purchasing new piece of fire apparatus to replace the truck now in use. A. C. Christopher, Mayor.

New Burlington, Ohio—Movement being started for organization of a volunteer fire department.

Freeport, N. Y.—Board of Trustees has approved the issuance of fire headquarters bonds to the amount of $70,000.

Hartsdale, N. Y.—An election is to be held August 15 to vote fire department bonds to the amount of $22,000, according to reports.

Marietta, Ohio—City Council voted in favor of issuing bonds to the amount of $6,000 for purchase of pumper for Hose Co. No. 2.

New Alexandria, Pa.—A volunteer fire department was organized with M. P. Shea as president.

Oto, Ia.—A volunteer fire department was organized here with A. L. Wise as chief.

Griffin, Ga.—The installation of a fire alarm system and improved equipment in fire department was recommended, according to reports.

Montpelier, Ind.—City Council to hold meeting Aug. 1 for purpose of purchasing a new piece of fire apparatus for rural protection.

Position Wanted

Delivery Engineer, thoroughly experienced and reliable, expert demonstrator, good mechanic, can handle sales also. Desires position with progressive manufacturer. Address: Box 285, c/o Fire Engineering, 24 West 40th St., New York City.

8-6, 20-9, 3

Wanted

Ex-Fire Chiefs in Central and Middle Atlantic states. If you can sell fire prevention and safety inspection service on a commission basis, write to Roscoe L. Smith, Ambler, Pa.

7-23

Westerly, R. I., Chief Dead

Chief George E. Egger, veteran head of the Westerly, R. I., Fire Department, died on July 29 at the Westerly Hospital from injuries received in a fall from a hay loft on the Thorp farm, Potter's Hill, near Westerly, on July 28. Chief Egger responded to a call from the Thorp home for a fire thought to be in a barn. Searching for the blaze, the chief went to the second floor and in walking through the hay fell from the loft to the ground floor, sustaining a fractured skull and internal injuries.

THOMAS F. MAGNER.

Five German Fireboats Fight Blaze

Five fireboats and eight fire departments were used to check a large fire that broke out in the Vulcan Shipyards on the Elbe River, near Hamburg, Germany. A large storehouse was destroyed.

The first company to arrive sent out an alarm for reinforcements. Ferry service across the Elbe River was suspended while fireboats drew up to strategic positions. Within a short time thirty-four streams were deluging the flames. Within an hour and a half, the roof of the warehouse collapsed and the fire was brought under control. The fire started after the shipyard was closed for the night so that no lives were lost.

Oconto, Wis., Buys Pumper—Oconto, Wis., has purchased a motorized pumper.

New Pumper Delivered to Pendleton, Ore.

Pendleton, Ore., recently received a Mack 750-gallon pumper. Fire chiefs from a number of Pacific Coast municipalities were on hand to witness the Underwriters' tests. The pumper had no trouble in passing these requirements.

CONVENTION DATES

August—MAINE STATE FIREMEN'S ASSOCIATION. 3rd Annual Convention, Bangor, Me. (Date to be set later.) Secretary, Earl E. Pratt, Auburn, Me.

August—UTAH STATE FIREMEN'S ASSOCIATION. 23rd Annual Convention, Provo City, Utah. (Exact date to be decided later.) Secretary, Charles A. Canning, Midvale, Utah.

Aug. 6-7—CHENANGO COUNTY FIREMEN'S ASSOCIATION, 8th annual Convention, Earlville, N. Y. Secretary, Charles Butts, Norwich, N. Y.; President, Chief H. C. Bartlett, Oxford, N. Y.

Aug. 6-7—CUMBERLAND VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 30th Annual Convention, Shippensburg, Pa. Secretary, C. L. Jacobs, Waynesboro, Pa.

Aug. 6-8—WASHINGTON STATE FIREMEN'S ASSOCIATION. 8th Annual Convention, Kelso, Wash. Secretary, H. S. Jenkins, Bellingham, Wash.

Aug. 12—MASSACHUSETTS PERMANENT FIREMEN'S ASSOCIATION. 19th Annual Convention, Taunton, Mass. Secretary William F. Thomas, Worcester, Mass.

Aug. 12-14—WISCONSIN PAID FIREMEN'S ASSOCIATION. 23rd Annual Convention, Two Rivers, Wis. Secretary-Treasurer, William H. Schultz, Sheboygan, Wis.

Aug. 12-15—WYOMING STATE FIREMEN'S ASSOCIATION. 4th Annual Convention and Tournament, Caspar, Wyo. Secretary, Chief Justin H. Patrick, Laramie, Wyo.

Aug. 15-16—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 47th Annual Convention, Pyramid Lodge, 1035 State St., Bridgeport, Conn. Secretary, D. W. Harford, 10 Chestnut St., South Norwalk, Conn.

Aug. 19-22—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 58th Annual Convention, Nyack, N. Y. Secretary, Fred A. Davis, Drawer X, Fort Edward, N. Y.

Aug. 25-27—ARKANSAS STATE FIREMEN'S ASSOCIATION. 9th Annual Convention, McGhee, Ark., Secretary, H. D. Compton, Central Fire Station, Little Rock, Ark.

Aug. 27-29—VIRGINIA STATE FIREMEN'S ASSOCIATION. 44th Annual Convention, Phoebus, Va. Secretary, E. K. Landis, Pulaski, Va.

Sept. 1-4—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 37th Annual Convention, Oakland, Cal. Secretary, Jay W. Stevens, 1014 Merchants' Exchange Building, San Francisco, Cal.

Sept. 2-4—KENTUCKY FIREMEN'S ASSOCIATION. 11th Annual Convention, Paducah, Ky. Secretary, Capt. S. G. Render, 940 Starks Bldg., Louisville, Ky.

Sept. 2-5—DOMINION ASSOCIATION OF FIRE CHIEFS. 22nd Annual Convention, Port Arthur, Ont. Secretary, Chief James Armstrong, Kingston, Ontario, Can. Exhibit Space, Chief A. S. Kapelle, Stratford, Ont.

Sept. 9-11—ILLINOIS FIREMEN'S ASSOCIATION. 43rd Annual Convention, Peoria, Ill. Secretary, Assistant Chief Roy W. Alsip, Fire Department, Champaign, Ill. Exhibits, Chief Albert Herring, Fire Department, Murphysboro, Ill.

Sept. 9-12—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 58th Annual Convention, Hotel Royal Alexandra, Winnipeg, Man., Canada. Recording Secretary, Chief James J. Mulcahy, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee. Chief Charles Alt, Fire Headquarters, St. Louis, Mo. Hotel Reservations, Chief D. A. Boulden, Winnipeg, Man.

Sept. 16-17—IOWA FIREMEN'S ASSOCIATION. 53rd Annual Convention, Boone, Ia. Secretary, Paul Soener, Independence, Ia.

Sept. 16-18—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. 51st Annual Convention, Pittsfield, Mass. Secretary, Daniel J. Looney, Room 1043, Old South Bldg., Boston, Mass.

Sept. 19-20—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 53rd Annual Convention, Auditorium, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Bldg., Newark, N. J.

Sept. 23-25—NATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS and Medical Directors of Civil Service Commissions. 9th Annual Convention, New York City. President, Dr. Harry M. Archer, Honorary Medical Officer, N. Y. F. D; Secretary, Dr. Arthur Wildman, New York Municipal Civil Service Commission, New York City.

Sept. 24-25—MISSOURI STATE FIREMEN'S ASSOCIATION. Annual Convention. Trenton, Mo. Secretary-Treasurer, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis.

Oct. 7-9—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 51st Annual Convention, Hotel Americus, Allentown, Pa. Secretary, Charles E. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 8-9—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. 2nd Annual Convention, Sheboygan, Wis. Secretary, Chief Arthur J. Rahn, Fire Department, Two Rivers, Mich.

Oct. 15—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular meeting, and Mayors' Night. Fire Headquarters, Mt. Kisco, N. Y. Secretary-Treasurer, E. Riviere, Fire Headquarters, Larchmont, N. Y.

Oct. 21-23—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 49th Annual Convention (2d in year), Scottsbluff, Neb. Secretary-Treasurer, H. A. Webbert, Kearney, Neb.

Oct. 21-23—RAILWAY FIRE PROTECTION ASSOCIATION. 17th Annual Convention, St. Louis, Mo., Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

November—SONOMA COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Petaluma, Cal.

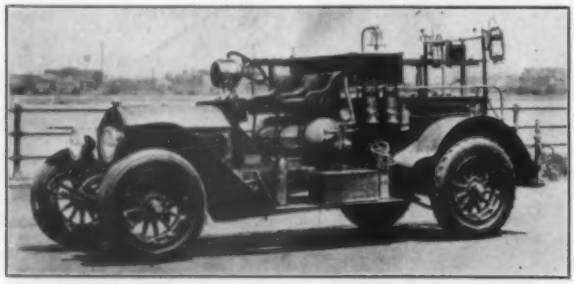
May 11-16, 1931—NATIONAL FIRE PROTECTION ASSOCIATION. 35th Annual Meeting, Toronto, Ont., Can. Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

Wapato Pays Only for Actual Work—Wapato, Wash., a town of 1,250 population pays its Chief and five firemen fifteen dollars a month. Twelve volunteers are paid two dollars for each drill actually attended—drills are held two hours the first of each month. The men are paid $2.50 a call including the first hour and one dollar an hour, after that. Men are paid on each quarter and must attend at least two drills a quarter in order to draw pay. Chief Rex L. Putnam is soliciting funds for a rural fire truck.

Changes in Fire Apparatus Design

In some industries, twenty years brings little changes in the products manufactured. Not so in the fire protection field.

After having delivered Register No. 7004, the American-LaFrance and Foamite Corporation has searched back through its files to compare it with Register No. 1 that was delivered to Lenox, Mass., twenty years ago. The old veteran has been serving Lenox well during all these years. Chief Oscar R. Hutchinson said:



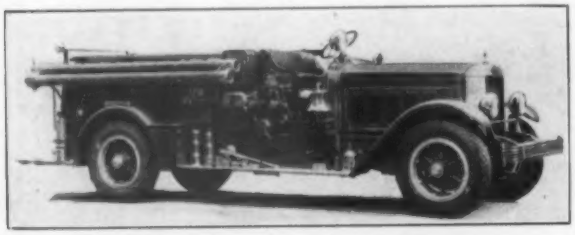
Old Register No. 1 Delivered in 1910 to Lenox, Mass.

"A short time ago we received a call to help fight a rather serious fire in a town some fifteen miles distant from Lenox. Old Register No. 1 was given the assignment, making the run in less than twenty minutes. We estimate that the machines has answered more than 1,100 alarms during its long service."

It required considerable courage at that time for Lenox to purchase the motorized fire apparatus. The majority of chiefs back in 1910 depended on the steamer which was drawn by three fiery steeds.

The photographs indicate what twenty years of development work in the automotive industry and the fire protection field have brought about in the design of fire apparatus.

The motor is more powerful and the frame is stronger and at the same time lighter; the steering mechanism is of better design; the cooling system has been improved and four wheel brakes make rapid stops possible. The steering wheel is on the left instead of the right hand side to improve to driver's visability.



A Fire Department Pumper of 1930 Design

Once can scarcely believe that only twenty years have passed by since Register No. 1 was delivered to Lenox and Register No. 7004 to Chattanooga, Tenn. But then fire department manufacturers have always been aggressive.

Dust Explosions—How to Prevent Them

(*Continued from page* 648)

mately 30 minutes when the floors under the storage bins dropped, the dust cloud was ignited by a flame, and an explosion followed.

Several dust explosions in industrial plants have brought forcibly to the attention of those interested in dust explosion prevention work the need of training firemen and instructing them in the proper way of fighting fires where the dust explosion hazard exists. While fighting a fire in a wood dust storage tank in a woodworking establishment, two firemen opened the tank to allow the dust to flow out. The dust was ignited by a flame in the tank and exploded, the firemen being enveloped by the flash and seriously burned. A short while later six firemen lost their lives and six others were severely burned while fighting a fire in another woodworking plant. After the fire in the dust bin had apparently been extinguished, the firemen opened the bottom of the bin and allowed the dust to run on to the floor approximately 15 feet below. As it fell a cloud of dust was formed, which was ignited by fire that had been smoldering in the bin or by the fire in a nearby boiler. The firemen were caught in the flames from the resulting explosion and received injuries from which six of them died.

Plant Inspections Important for Firemen

Some fires, apparently extinguished after a few minutes, have become disastrous because the fire department did not know the many flues, vertical openings, openings in fire walls, concealed spaces, and other avenues through which a fire could spread. Only close and systematic inspections of buildings will give this information.

In order that members of the fire department may become acquainted with the dust hazard, some provision should be made for periodical inspection of industrial plants and manufacturing establishments. Inspections of this kind serve the following purposes:

1. Conditions which may cause or help to spread fires are discovered and remedied.
2. Firemen become familiar with the structural features of the plant.
3. A definite knowledge of the contents of buildings and of any hazardous materials handled or manufactured is secured.

Explosions have occurred during the fighting of fires when a heavy stream of water has been thrown on to a pile of dust. The force of the stream throws some of the dust into suspension in the air and when the dust cloud comes in contact with a flame, an explosion results. In one instance of this kind an explosion, which injured several people, took place when a heavy stream of water struck a pile of cork dust and forced the dust into the fire.

Precautionary Measures Recommended

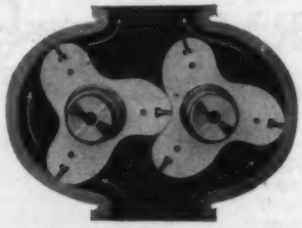
The following precautionary measures are suggested as possible means of dealing with the various explosion causes referred to:

1. If a dust cloud would be formed or an explosion hazard created by removing immediately the contents of bins in which a fire has occurred and apparently is extinguished, it would be better to flood the bin and thoroughly drench the material before undertaking to remove the contents.
2. Plants should be systematically inspected by firemen in order to acquaint them with any dust explosion hazards. This would prevent the unnecessary exposure of firemen to dust explosions.
3. When wetting explosive dusts stored in piles, a spray would be preferable to a heavy hose stream.

The United States Department of Agriculture is very desirous of cooperating with fire departments in the application of control measures for the prevention of dust explosions during fire fighting. The Department will be glad to render any assistance it can in connection with this matter, and extends a cordial invitation to all to communicate at any time with the engineers in the Bureau of Chemistry and Soils in connection with any problems relating to dust explosions.

We are very glad to have had an opportunity to present the subject, and hope the material presented will be helpful in reducing loss of life and property from dust explosions and resulting fires.

(From a paper read before the annual convention of the Ohio Fire Chiefs' Association.)



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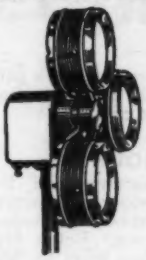

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At night these three revolving red signal lights make identification of the apparatus instantly possible as far as light is visible.

Insist upon having "Roto-Rays" on the next piece of apparatus you buy. It's just as essential as the whistle, the siren or the bell. Easily installed on apparatus now in service.

The Powerful BUCKEYE EXHAUST WHISTLE predominates in over 600 fire departments where serious traffic problems exist.

The shrill blast of a Buckeye Whistle effectively carries far ahead of the apparatus. Its sound is distinctive and extremely penetrating.

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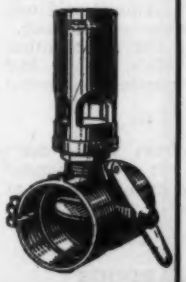
Prices and full particulars upon request.



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Write for illustrations and complete descriptions

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61 Allen Street Rochester, N. Y.

FALSE ALARMS

HE MEANT IT

With the advent of warm weather, the doors of the fire house were kept open. As was expected, this practice brought a daily crowd of youngsters who gathered to admire the highly polished apparatus and to dream of the time when they too would be firemen. Finally one became real bold and asked concerning the life of a fireman.

"Don't you ever be a fireman," said the man in uniform with a twinkle in his eye. "Look at me. I only get three hours sleep a day."

"Gee whiz! How's that?"

"I get the rest of my sleep at night."

Some ocean travelers are no more than twelve hours at sea, when they begin to resemble their passport photographs.

MORE PROTECTION

The house located in the suburban section of the city was pestered by petty thieves who broke in during the night when the company was out fighting a fire. In order to safeguard their belongings the men contributed to buy the largest dog that they could find.

Shortly afterwards the station was again entered by the petty thieves while the dog slept on. A complaint was made to the man who sold the dog.

"What you need now, gentlemen," suggested the kennel owner, "is a little dog to wake up the big dog."

The Post Office now stamps letters with this advice: Notify your correspondent of change of address.

Also we might add, in some cases, of change of heart.

ACCORDING TO HOYLE

Whatever else a fireman may be, he is always courageous and by all means, honest. The department had an outing and Mike Connors was one of the many who went. On the way home, he entered a fish store where he was known and said to the proprietor:

"Jim, stand over there and throw me five of the biggest of those trout."

"Throw 'em? What for?" asked the dealer in amazement.

"I want to tell the family I caught them. I may be a poor fisherman, but I'm no liar."

POINT OF VIEW

A large crowd gathered in the fire house to inspect the new fire apparatus. The chief turned to one whom he thought was connected with a nearby department.

"Which do you like better, balloon tires or solid rubber tires."

"I like balloon tires, better," was the answer.

"What kind of truck do they have in your department?"

"I ain't with any department. I'm a pedestrian."

MOST TROUBLESOME

Even at the Ladies' Auxiliary meeting, the side line discussions are often quite romote from the subject in hand. So while the chairman was bringing up the subject of sandwiches for marchers in the annual convention parade, two members in the rear were discussing home administration.

"Do you know I have the time of my life keeping dirt out of my children's ears."

"It's the same with me," replied the other member. "My husband doesn't seem to care what he says in front of the children."

—Drawing by "Art" Espey

Speaking of the folks who made history, what town or village hasn't "Old Dad" So and So who first made his mark at the grist mill fire and has been a fire department leader ever since. Attend any convention and you'll find him carrying the banner at the head of the line.

TOO MUCH ATTENTION

Bob was the Adonis of the company, and also the unfortunate one to step down an open hole. He was rushed to the hospital at once, where he received very good attention.

"Do you know that fireman in Ward B is awfully good looking?" said one nurse to the head nurse on the floor.

"Oh yes, I know, but don't bother to wash his face. He's already had that done by four nurses this morning."

Flies and mosquitoes really don't get all they should out of the summer vacation period. So many of them, at resorts, spend most of their time indoors.

VERY HAZARDOUS

During the summer months, Mike had been taking sandwiches from home which his faithful wife prepared for him. But one day the lunch did not agree with him and he rushed to the corner drug store.

"Say, fix me up something in a hurry. Maybe I'm poisoned. It must have been the sandwiches the wife gave me."

"I'm not at all surprised," said the druggist. "A man is taking a chance eating a sandwich not made by a registered pharmacist."

LESS AFFECTIONATE

Jerry had the night off and the girlfriend was the one who had the pleasure of his company. He thought it would amuse her if he told a riddle, and being in the fire service it had the department angle.

"Listen, dear, what is the difference between a fireman and a Mack truck?"

"I don't know, Jerry. I ain't never been kissed by a Mack truck."

What we like about a modern apartment is you can answer the door, kick the dog, open a window, look in the refrigerator, and turn on the radio without getting up out of your chair.

TOO EXTRAVAGANT

The boys have one that they delight to tell about MacGregor. Hearing so much about the fortunes won by participants in the Derby, Mac decided to take two chances on an automobile raffled for the benefit of the pension fund. And sure enough, Mac won the car. Friends congratulated him, but Mac had a woebegone look.

"What's the matter, aren't you happy that you won the car?"

"It's the second ticket," replied Mac. "I can't imagine why I ever bought it."

Does your hand ever itch for a pencil? If so, you have the makings of an artist or a motorcycle cop.

SUSPICIOUS

The hotel was burning and the flames approached nearer and nearer to the guest marooned on the window ledge on the sixth floor. Below firemen held a large canvas sheet for him to jump into, but their shouts and signals were in vain. Finally one managed to make himself heard just as the walls were on the point of falling.

"Jump!" he shouted. "Why don't you jump?"

"Not till you put that sheet down on the ground," the victim bellowed back. "I'm afraid you fellows will drop it."

HONESTY ALWAYS

Jim had returned from a vacation spent near a stream that abounded with fish. And like all fishermen, he was most anxious to tell others of what had happened.

"Talking of fishing, on my last week's trip I caught 999 fish, all woppers."

"Come now," said another with a twinkle in his eye, "why not make it a thousand and be done with it?"

"Not me," replied Jim. "I caught 999. I'm not going to tell a lie for the sake of one fish."

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Used and endorsed by rural and city departments everywhere. Quickest, most economical way to extinguish grass, awning or roof fires. Pump uses only clear water.

Write for literature.

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Small Fire Pumps

We build light, speedy Fire Apparatus, with 100 gal. Rotary Pump, 100 gal. Tank of water, for initial attack on small fires. Valuable addition to equipment of any town. Saves larger Apparatus, takes place of Chemical Tank and reduces damage to house furnishings.

Also suitable for fires outside districts, and for fighting forest fires.

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A Powerful Portable Electric Searchlight

The EXCELLIGHT is always ready, safe, powerful, economical and simple. It is moisture and waterproof, which eliminates short circuits and greatly increases the life of the batteries.

The EXCELLIGHT is indispensable, especially around places where inflammable materials are stored or manufactured.

With ordinary use the batteries will last for many months and can be replaced at small cost. Batteries are standard.

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Used and endorsed by Fire Departments, Railroads and Police Departments. Always dependable.

Write for sample, full information and special net prices to fire departments.

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110 North Franklin St., Chicago, Ill.

If a hose salesman can convince you by any argument that his three-year guarantee will result in just as good an adjustment, should one be necessary, as a guarantee for six years, from a reliable company, certainly if you have a goat, he's got it.

BI-LATERAL FIRE HOSE is guaranteed six (6) years.

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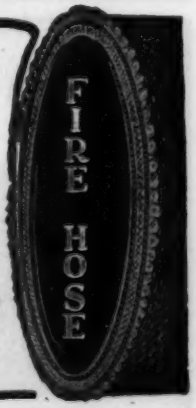

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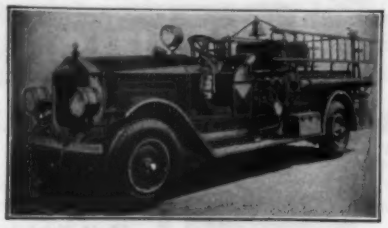

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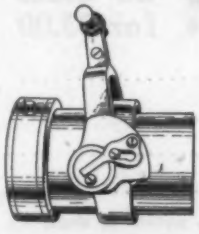

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FIRE FIGHTERS CLOTHING

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As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers: Date.....

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Nos. .....
Nos. .....
Nos. .....

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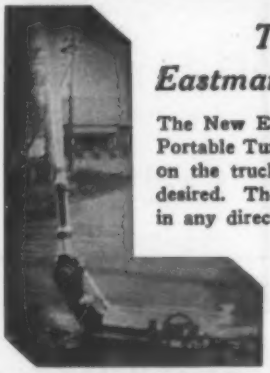
For Information on Any Equipment Not Listed, Write on This Page or Use Separate Sheet

8-6



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The New Eastman Deluge Gun is a Portable Turret Pipe that can be used on the truck or ground, as may be desired. The stream can be operated in any direction by one man.

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Complete Automatic Spring Outfits for Doors Opening In and Out. Used throughout the world. Once on the doors your door opening troubles cease. They last a lifetime. Send for Bulletins.

The High Efficiency
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3 Four bearing pump shafts.
4 Stainless steel pump shafts.

The design of Hale pumps has been perfected through fifteen years of active experience, and has resulted in a rugged, highly efficient product.

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Manufacturers of Rotary Fire Pumps.

Novo Acid Jars & Holders

of every description stronger than lead and non-corrosive. Used by departments throughout the country.

Chemical Tanks and Lally Quick Opening and Self-packing Top for Chemical Tanks

Lally Improved Fire Hose Couplings, Fire Extinguishers and Charges, Fire Hose and Fire Department Supplies in General

Send for Complete Catalog

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Wilmington Brass Co., Wilmington, Del.

G

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24 W. 40th St., N. Y. C.

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From These Responsible Manufacturers

They are leaders in their respective lines and are in position to take the best possible care of your requirements.

The fact that they are using advertising space in FIRE ENGINEERING indicates they want your inquiries and will be glad to submit specifications and prices without placing you under any obligations whatever.

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They are helping us make the paper better by their advertising. You can help them and help us and help yourself by giving them your business. Let's all pull together! All will benefit.

The Publishers

...Save Hundreds of Thousands!

Shuredry Waterproofed Salvage Covers

CITY OF CHARLOTTE
NORTH CAROLINA

IN REPLY ADDRESS
Fire Department.

Nov. 13th, 1929.

Fulton Bag & Cotton Mills,
Atlanta, Ga.

Gentlemen:-

Sometime ago I received an inquiry from you as to our "Shuredry" Salvage Covers.

We have been using them for the past two and one-half years and have received great results from them.

I am enclosing several Newspaper clippings so that you may see what the people, as well as the Firemen, think of them, as we have saved hundreds of thousands of dollars by their use.

Respectfully.

W H Palmer

WHP/a Chief Fire Department.

Chief Palmer
CHARLOTTE, N.C.
Shuredry
Waterproofed Salvage Covers
Minimize water damage—Reduce Insurance Rates

This is but one of the clippings from the Charlotte Observer referred to in Chief Palmer's letter.

Write Our Nearest Plant For Samples and Prices

Mr. Hendrix Palmer, Chief,
Charlotte Fire Department.
My Dear Chief:
It is a pleasure to pass along to you, publicly, the very favorable remarks I have heard about the care and efficiency displayed by your department, particularly as witnessed by a crowd at the fire in the Perry-Mincey store on College street the other night. The consideration shown by you in spreading tarpaulins over the furniture on the first floor to protect it from the water being thrown on the fire on the second floor caused very favorable comment as well as the efficiency shown in fighting the fire. Charlotte has cause to be proud of her fire department.

GENERAL MECKLENBURG.

Manufacturers Since 1870

Fulton Bag & Cotton Mills

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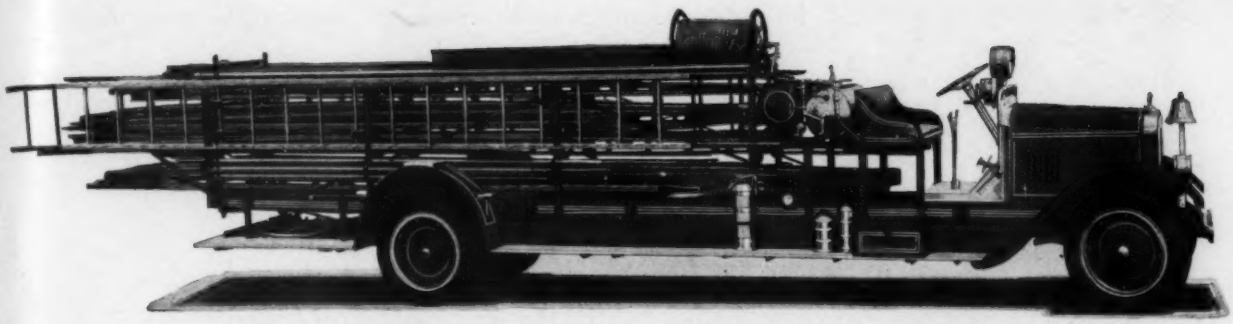
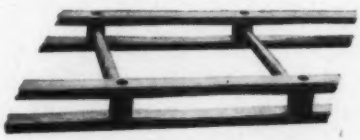


Pirsch Ladder Trucks—In Four Sizes—Travel Safely and Get Into Action Quickly

Known and Used from Coast to Coast

PIRSCH
EST. 1857
LADDERS



Above—Section of the famous Pirsch Trussed Ladder, showing square end rungs firmly bolted into place. Each space between rungs is a separate truss. Can be climbed on either side.

Below—New Pirsch Folding Scaling Ladder in use. Steps fold into ladder pole when not in use. Carries like a pike pole. This is the best improvement ever made in Scaling or Pompier Ladders.

WHEN is a ladder not a fire ladder? When it is not completely trussed. When rungs turn under desperate grips. When the loaded ladder sways dangerously. When a minor accident ruins the whole ladder. There are plenty of reasons why all ladders are not fire ladders.

Pirsch offers you a trussed ladder that is known from coast to coast in more than 2,000 Fire Departments, as a real fire ladder. Each space from rung to rung is a complete, separate truss. It is a trussed ladder that can be climbed on either side with equal ease and safety. Even if rungs should loosen they cannot turn. Any rung can be replaced, any time, without disturbing the rest of the ladder. No flaws are tolerated, and every part is much stronger than it ever needs to be.

Invented and first built by Peter Pirsch over 30 years ago to provide greater safety for firemen, no stronger, lighter, safer or more durable ladder has ever been built.

The Pirsch line of improved ladders includes trussed and solid side ladders; a new Scaling Ladder with folding steps, and the famous Pirsch Lapless Extension Ladder—the most valuable improvement ever made in extension ladder design.

Write for full information on the complete Pirsch line of real fire ladders.

PETER PIRSCH & SONS CO.

Factory and Home Office **Kenosha, Wis.**

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Another famous brand of Eureka Fire Hose that has gained recognition wherever the best of fire equipment is used. For hose of excellence and durability-Standardize on Eureka!

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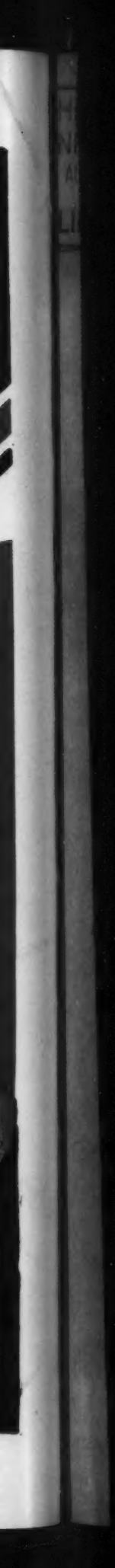
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